

THEY HAVE
THE WILL...
WE HAVE **THE WAY**



PEO SOLDIER PORTFOLIO
OCTOBER 2005

To The Reader:

In April 2002, the Assistant Secretary of the Army for Acquisition, Logistics, and Technology activated Team Soldier at Ft. Belvoir, VA. Program Executive Office (PEO) Soldier's mission is to develop, acquire, field, and sustain everything the Soldier wears, carries, and operates to increase combat effectiveness. This third edition of the PEO Soldier Portfolio is a definitive reference that highlights the execution of this mission by Team Soldier.

PEO Soldier's vision is to be the center of excellence for delivering Soldier capabilities to the Force to continuously dominate the battlefield across the full spectrum of war. The organization remains focused directly and exclusively on the Soldier – today, throughout the Army's transformation to the Future Force, and beyond, in order to:

- Increase Soldiers' combat effectiveness
- Deliver products that save Soldiers' lives
- Improve Soldiers' quality of life

Three Project Managers and seven Product Managers are responsible for the 376 programs described in this portfolio. Program Executive Office Soldier provides overall direction and guidance.

We hope this portfolio will be a valuable resource for you.



James R. Moran

Brigadier General, USA
Program Executive Officer Soldier



Introduction	1
Rapid Fielding Initiative	6
FY05 RFI Equipment List—All Soldiers	8
FY05 RFI Equipment List—Additional Items for Brigade Combat Teams	10
Project Manager Soldier Warrior	12
Product Manager Air Warrior	14
Air Warrior (AW)	16
Aircraft Modular Survival System (AMSS)	18
Aircraft Wireless Intercom System (AWIS)	20
Aircrew Integrated Helmet System (AIHS), HGU-56/P Helmet	22
Cockpit Air Bags System (CABS)	24
Communication Ear Plugs (CEP)	26
Electronic Data Manager (EDM)	28
Helicopter Oxygen System (HOS)	30
Joint Advanced Laser Eye Protection Visor (JALEPV)	32
Maxillofacial Shield (MFS)	34
Microclimate Cooling System (MCS)	36
SRU-37/P One-Man Life Raft and Container	38
Product Manager Land Warrior	40
Dismounted Battle Command System (DBCS)	42
Dismounted-Combat ID Marking System (D-CIMS)	44
GloTape and Soldier Combat Helmet Identification Marking System (SCHIMS)	46
Land Warrior (LW)	48
Multiband Inter/Intra Team Radio (MBITR) AN/PRC-148(V)(C)	50

Table of Contents

Product Manager Mounted Warrior	52
■ Mounted Warrior (MW)	54
Future Force Warrior and the Ground Soldier System	56
Project Manager Soldier Equipment	58
Product Manager Sensors and Lasers	60
■ AN/AVS-6 Aviator's Night Vision Imaging System (ANVIS)	62
AN/PAS-13 Thermal Weapon Sight (TWS)	64
AN/PEQ-2A and AN/PAQ-4C Aiming Lights	66
AN/PVS-7D and AN/PVS-14 Night Vision Devices	68
AN/PVS-10 Sniper Night Sight (SNS)	70
Enhanced Night Vision Goggle (ENVG) (Image Intensifier and Infrared Capabilities)	72
Integrated Laser/White Light Pointer (ILWLP)	74
Laser Borelight System (LBS) AN/PEM-1	76
Lightweight Laser Designator Rangefinder (LLDR) AN/PED-1	78
Lightweight Video Reconnaissance System (LVRS)	80
MK VII Target Locator	82
Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF)	84
Viper Target Location System	86
Product Manager Clothing and Individual Equipment	88
■ Advanced Bomb Suit (ABS)	90
Advanced Tactical Parachute System (ATPS)	92
Aircrew Clothing	94
Aircrew Equipment	96
Army Combat Uniform	98

Ballistic and Non-Ballistic Protection	100
Blast Protective Footwear System (BPFS)	102
Body Armor	104
Body Armor, Aircrew Integrated Recovery Survival Armor Vest and Equipment (AIRSAVE)	106
Body Armor, Concealable	108
Boots – Cold (Wet and Dry) Weather	110
Boots – Utility	112
Camouflage Systems	114
Canteens	116
Chemical Protective Clothing and Gear	118
Cold Weather Accessory Garments	120
Cold Weather Mittens	122
Combat Eye Protection	124
Combat Vehicle Crewman (CVC) Clothing	126
Extended Cold Weather Clothing System (ECWCS)	128
Helmets	130
Joint Service Lightweight Integrated Suit Technology (JSLIST)	132
Load Carriage-Related Equipment	134
Military Police and Law Enforcement Equipment	136
Modular Lightweight Load-Carrying Equipment (MOLLE)	138
Mountaineering Equipment	140
Parachute, MC1-B/C/E	142
Parachute, T-10C	144
Parachutist Equipment	146
Personal/Optional Clothing and Equipment	148
Sleeping and Shelter Systems Equipment	150

Table of Contents

Snow/Ice Mobility Equipment	152
Toxicological Ensembles	154
Urban Utility Equipment (Grappling Hook and Micro-Rappel System)	156
Utility Gloves	158
Utility Uniforms and Accessories	160
Wet Weather Outer Garments	162
Project Manager Soldier Weapons	164
Product Manager Crew Served Weapons	166
Ammunition Research, Development, Testing, and Evaluation	168
Enhanced .50 Caliber Machine Gun (E50)	170
M101 Common Remotely Operated Weapon Station (CROWS) and CROWS–Lightning	172
M107 Semi-Automatic Long Range Sniper Rifle (LRSR)	174
M145 Machine Gun Optics	176
M192 Lightweight Ground Mount for Machine Guns	178
M2 .50 Caliber Machine Gun	180
M24 Sniper Accessory Kit	182
M24 Sniper Weapon System (SWS)	184
M240B 7.62mm Medium Machine Gun	186
M240B Combat Ammo Pack	188
M240B Weight Reduction Program	190
M240H 7.62mm Machine Gun (Aviation Version)	192
M249 200-Round Soft Pack	194
M249 Squad Automatic Weapon (SAW)	196
M249 Squad Automatic Weapon (SAW) Collapsible Buttstock	198
M249 Squad Automatic Weapon (SAW) Improved Bipod	200

M25 Stabilized Binoculars	202
MK19 Grenade Machine Gun	204
MK19 Tactical Engagement System (TES)	206
XM110 7.62mm Semi-Automatic Sniper System (SASS)	208
XM307 25mm Advanced Crew Served Weapon (ACSW)	210
XM312 Lightweight .50 Caliber Machine Gun	212
Product Manager Individual Weapons	214
Close Quarters Battle Kit (CQB Kit)	216
Future Handgun System (FHS)	218
M16A4 Rifle	220
M16 Rifle Mod Line	222
M4 Carbine	224
M4 Carbine Mod Line	226
M9 Pistol, M9/M11 Pistol Rail	228
Magnified Combat Optic (MCO)	230
Objective Individual Combat Weapon System Increment I (OICW Increment I)	232
Objective Individual Combat Weapon System Increment II (OICW Increment II), XM25	234
Small Arms Family of Suppressors (SAFoS)	236
XM26 12 Gauge Modular Accessory Shotgun System (MASS)	238
XM29 Integrated Airburst Weapon System	240
XM320 Grenade Launcher Module (GLM)	242
PEO Soldier Offices	245
Glossary	247
Index	257

Introduction



Introduction: The Face of Freedom

PEO Soldier: The Right Concept at the Right Time

The American Soldier: The face of our freedom and the heart of our Army.

Our Soldiers are the best equipped Soldiers in the world. Program Executive Office (PEO) Soldier was created with one purpose: to equip the Soldier. Our focus is to ensure that we develop the best equipment and field it as quickly as possible so that our Soldiers remain second to none.

Since its inception, PEO Soldier's singular mission has been arming and equipping Soldiers to enable peak performance across the spectrum of military operations today and in the future. As recent operations in Iraq and Afghanistan have vividly illustrated, our military men and women make a difference every day as they face the challenges of peace and war. PEO Soldier works closely with them, getting them the gear they need as rapidly as possible—and listening to them, so that their equipment is updated in a systematic way.

In viewing the Soldier as a system, the Army is taking a much more strategic approach to designing, producing, and fielding Soldier equipment. In this respect, PEO Soldier is at the vanguard of Army transformation. In contrast to the old, “off-the-rack” approach, this systematic view of the Soldier and everything he or she wears or carries ensures that each piece of equipment worn or carried by Soldiers fits into the overall design and each piece works in concert with others.

A recent example is an improvement to the Interceptor Body Armor (IBA) known as DAP, or the Deltoid Axillary Protector. DAP was developed in response to improvised explosive device (IED) threats faced in Iraq. Unlike conventional threats, which usually come from the front,

back, or above, IEDs throw shrapnel and spall from below and from the sides. DAP enables Soldiers to cover both the shoulder and upper arm areas, as well as the armpit and underarm. The original design of IBA is open around the arms to allow air to circulate. But it is also a modular design, allowing for additions. Soldiers in the field developed the “prototype” themselves, using groin protectors. PEO Soldier responded by adding the DAP improvement to the IBA system.

This is just one of many examples that prove the effectiveness of the Army's PEO Soldier concept. Another example is Air Warrior. Army aircrews deploying in support of Operation Iraqi Freedom and Operation Enduring Freedom are being equipped with this newly developed, new-generation aircrew ensemble that provides advanced life support, ballistic protection, and nuclear, biological, and chemical protection in a modular system. Air Warrior enhances aircrew comfort, cockpit synergy, aircraft mission capability, and improves lethality, survivability, mobility,



Introduction

and sustainability. The system maximizes safe aircraft operation and human performance while not encumbering the aircrew. Air Warrior includes:

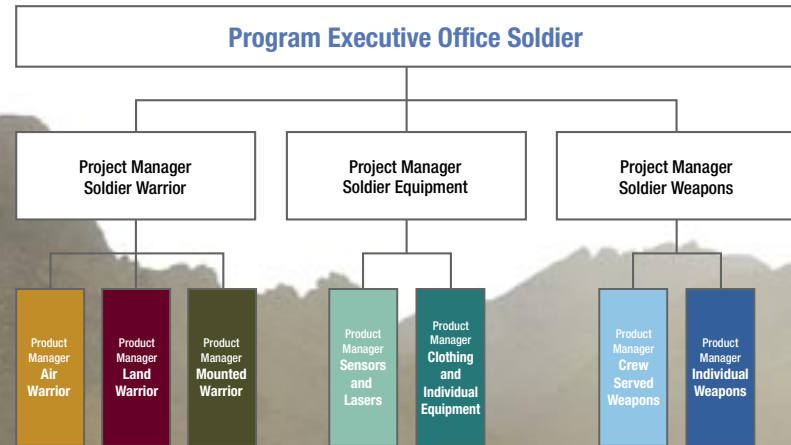
- An improved, flame-retardant aviation battle dress uniform
- A primary survival gear carrier that includes various first aid, survival, signaling, and communications equipment
- Flexible body armor with a ballistic upgrade plate that will protect the aviator from multiple-hit .30 caliber armor-piercing rounds
- A microclimate cooling system garment worn under chemical protective and duty uniforms that increases mission duration times by more than 350 percent

The results of the PEO Soldier approach are multi-faceted: improved capability to accomplish individual and collective tasks, more lives saved, improved quality of life, enhanced confidence, and a better ability to function in an integrated manner.

Headquartered at Fort Belvoir, Virginia, PEO Soldier designs, develops, procures, fields, and sustains virtually everything the Soldier wears or carries. By employing innovative concepts and technologies, PEO Soldier has made great strides in quickly getting improved equipment into the hands of Soldiers, especially those in Iraq and Afghanistan. The Rapid Fielding Initiative, for instance, expedites procurement to provide

better equipment to Soldiers where and when they need it. Spiraled technologies, such as Interceptor Body Armor, the Dismounted Battle Command System (DBCS), and the Advanced Combat Helmet are also being accelerated to support the Soldier.

PEO Soldier headquarters is supported by three Project Managers (PMs). PM Soldier Warrior is responsible for Land Warrior, Air Warrior, and Mounted Warrior. PM Soldier Equipment has purview over sensors and lasers, as well as clothing and individual equipment. PM Soldier Weapons manages both individual and crew-served weapons.



Project Manager Soldier Warrior

Soldier Warrior supports Soldiers through the acquisition of Warrior systems: Air Warrior, Land Warrior, and Mounted Warrior. The Product Managers apply the Soldier-as-a-system concept to develop components into individual, integrated systems designed to increase combat effectiveness, decrease combat load, and improve mission flexibility. Whenever possible, technologies are “spiraled out” of these systems to get them quickly into the hands of Soldiers. Examples include the Commander’s Digital Assistant from DBCS, the Multi-Band Inter/Intra-Team Radio (MBITR), and the Advanced Combat Helmet.

Product Manager Land Warrior

PM Land Warrior integrates the Soldier into the digital battlefield and improves individual Soldier battle command and tactical awareness. Land Warrior, the first integrated Soldier system, includes everything an infantry Soldier wears or carries on the battlefield. The system provides significant improvements in Soldier lethality, survivability, mobility, and sustainment. Land Warrior’s improved battle command and tactical awareness will also reduce fratricide incidents among Soldiers.

Product Manager Air Warrior

PM Air Warrior integrates all aviation life support and mission equipment into a single aircrew ensemble that enhances cockpit synergy and aircraft mission capability. This system leverages several joint service technology efforts to create a total, modular system that increases freedom of movement at the flight controls, mobility to safely operate aircraft systems, and ability to enter and exit the aircraft. Microclimate Cooling System reduces heat stress so that mission duration time in the full, mission-oriented protective posture is increased.

Product Manager Mounted Warrior

Mounted Warrior develops and fields integrated Soldier Systems for combat vehicle crewmen. The Mounted Warrior Soldier System is an integrated approach to equipping the mounted crewman and select maneuver support/maneuver sustainment Soldiers to fight, survive, and win across the full spectrum of operations. The complete system links mounted crewmen to their platform sensors and available C4ISR equipment organic to their individual units and provides enhanced soldier protection.

Project Manager Soldier Equipment

PM Soldier Equipment provides technical solutions that enhance Soldier lethality, survivability, and mobility on the battlefield. It supports the Soldier with a variety of highly advanced night vision and other technologies that enable Soldiers to “own the night.” Its products also include state-of-the-art personal and unit equipment such as man-portable laser technologies for illuminating, pointing, range-finding, and designating targets; and tactical and environmental protective clothing that enhances Soldier survivability against both man-made and environmental threats such as adverse weather conditions, small arms and fragmentation, and chemical, biological, radiological, nuclear and explosive toxic industrial chemicals/toxic industrial material threats. Soldier Equipment also procures individual

airdrop equipment to provide Soldiers with enhanced capability for battlefield mobility.

Product Manager Clothing and Individual Equipment (PM-CIE)

PM-CIE supports Soldiers in the full spectrum of military environments, from garrison to major theater war, from Army dress uniforms to tactical clothing and equipment, to special capability needs. PM-CIE provides state-of-the-art individual and unit equipment that is safe and durable and that provides the capabilities necessary for Soldiers to survive the modern battlefield. CIE enhances survivability through technologically advanced tactical and environmental protective clothing and individual chemical protective gear.



Introduction

Product Manager Sensors and Lasers

PM Sensors and Lasers provides Soldiers the capability to see, identify, and engage targets in smoke, haze, or no light conditions. It provides technologies that enable Soldiers to operate in full day and night conditions, utilizing cooled and uncooled thermal sensor (e.g., miniature forward-looking infrared, or FLIR), image intensification (I2), and fused imaging (I2 and FLIR) technologies. Additionally, Sensors and Lasers provides low-light solid state sensors, cooled and uncooled lasers, high-resolution miniature displays, integrated optics, and man-portable range finders and target designators.

Project Manager Soldier Weapons

PM Soldier Weapons supports Soldiers through the development and production of current and future weapon systems. Soldier Weapons enhances current systems and develops next-generation weapons technology. It ensures that Soldiers are equipped with world class weapon systems,

ammunition, and associated target acquisition and fire control products, today and in the future. The next generation of weapons includes the following:

- Objective Individual Combat Weapon (OICW) Increment I Modular Assault Weapon System
- XM29 Integrated Airburst Weapon System
- XM25 Airburst Weapon System
- XM307 Advanced Crew Served Weapon
- XM312 .50 Caliber Machine Gun
- XM26 Modular Accessory Shotgun System
- M107 Long Range Sniper Rifle
- XM101 Common Remotely Operated Weapon Station

Individual and crew served weapon systems provide Soldiers with decisive overmatch capability by dramatically increasing lethality and range at lower weight.

Product Manager Individual Weapons

PM Individual Weapons maintains and improves current equipment, such as rifles, carbines, pistols, and grenade launchers for the Army and other services. It provides Soldiers with a decisive overmatch capability by increasing the lethality, range, and capability of those systems. Individual Weapons also provides the development of next-generation individual weapons, such as OICW Increment I. The benefits of this type of system include increased service life, decreased training burden, decreased logistics burden, reduced weight, and multi-configurable variants (changeable barrels and accessories).

Product Manager Crew Served Weapons

PM Crew Served Weapons maintains and improves light, medium, and heavy machine guns, automatic grenade launchers, sniper systems, and associated fire control and target acquisition products for the Army and other services. It also manages the research and development of all small arms ammunition such as the



family of 25mm rounds. PM Crew Served Weapons provides Soldiers with a decisive overmatch capability by increasing the lethality and capability of their systems; it also provides the next generation of crew served weapons for the Army. The Common Remotely Operated Weapon System, or CROWS, for example, has enabled Soldiers to acquire and fire upon a target from a protected position and while on the move.

Rapid Fielding Initiative

The Rapid Fielding Initiative (RFI) gets equipment to Soldiers where and when they need it by pushing the Army acquisition process much closer to a private-sector business model, reducing or eliminating red tape and delays associated with military procurement. RFI began in November 2002 when PEO Soldier representatives met directly with Soldiers in the field in Afghanistan to gather feedback about inadequacies

in equipment, how to address them, and what new or additional equipment the Soldiers needed to succeed.

RFI provides immediate critical capabilities now to Soldiers who need it most. It dramatically speeds procurement of innovative and essential items that used to take years using traditional Army development and procurement methods.

Conclusion

Supporting the tireless efforts of our Soldiers, PEO Soldier plays an integral role in keeping America's defenses strong. As warfighting methods continue to evolve, PEO Soldier stands ready to equip the Soldier with the best equipment, in the shortest time, wherever our global interests dictate. Our ongoing stand against terrorism, as well as our engagements in Iraq and in other countries, demonstrate the success of the PEO Soldier concept of the right equipment in the right place at the right time plays in our Soldiers' efforts. The technologies that PEO Soldier sustains, fields, and develops play a crucial role in meeting not only today's challenges but those of the future.

Nevertheless, it is the Soldier who is the face of freedom, the heart of our Army, and the most advanced combat system in the Army's arsenal. PEO Soldier ensures that American Soldiers have everything they need to remain confident and effective.





Rapid Fielding Initiative



The **Army's Rapid Fielding Initiative (RFI)** program ensures that our Soldiers receive the finest, state-of-the-art individual and small unit equipment the Army can procure—as rapidly as it can be procured. RFI enhances our fighting forces' capabilities in the daily performance of their missions, provides an equitable distribution of capabilities across our force, establishes a common baseline among units, and facilitates Soldier modernization in a systematic

and integrated manner commensurate with the principles of the Soldier-as-a-System philosophy.

Since PEO Soldier began fielding RFI equipment in November 2002, more than 400,000 Soldiers have been equipped with the finest state-of-the-art equipment, providing significant enhancements to their lethality, survivability, and operational quality of life. Through March 2005, 33 brigade combat teams and nearly 200,000 support troops have been fielded RFI equipment, either at Army installations located around the world or in theater. A total of 30 brigade combat teams are on track to be fielded during fiscal year 2005 alone.

In January 2004, the Chief of Staff of the Army expanded the original scope of RFI—Soldiers deployed/ deploying to Afghanistan and Iraq—to encompass the entire operating Army of 948,000 Soldiers and directed completion of that mission by the close of fiscal year 2007. This expanded mission complements the efforts of the Army to reorganize and provide state-of-the-art warfighting equipment and capabilities to our Soldiers around the world.

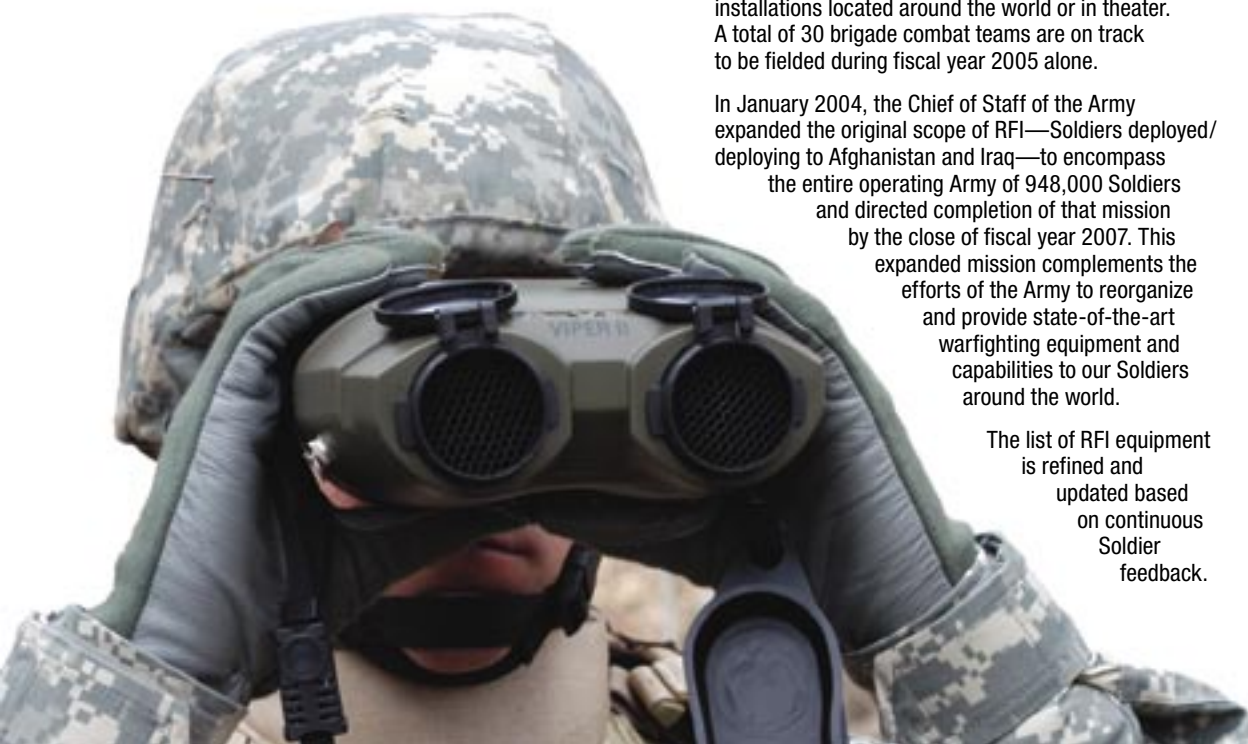
The list of RFI equipment is refined and updated based on continuous Soldier feedback.

Currently, the RFI list contains more than 50 items of the most up-to-date equipment for Soldiers and small units in the categories of force protection/ mobility, lethality, soldier mission essential equipment, and individual weapons optics.

The RFI program expedites the process of acquiring and fielding up-to-date, government off-the-shelf and commercial off-the-shelf individual equipment and weapons technology to support Soldiers engaged in combat operations. Specifically, it is aimed at ensuring our Soldiers—whether regular Army, Reserve, or National Guard—have the most current technology through Army supply channels to enhance their mission effectiveness.

For selected items, PEO Soldier has been successful in achieving dramatic increases in production by U.S. industry to meet the critical demands of the War on Terrorism. Because of the RFI program, the turnaround time for getting equipment into Soldiers' hands, or from "warehouse to foxhole," has improved significantly: what used to take months or years now takes as little as days or weeks from date of order to date of delivery to the Soldier.

RFI is the vanguard for Army logistics, sustainment, and transformation. As we progress toward the Future Force, RFI and programs like it will be the rule rather than the exception. Throughout this process, PEO Soldier is committed to saving Soldiers' lives, improving their quality of life, and increasing their combat effectiveness.



FY05 RFI Equipment List—All Soldiers



FY05 RFI Equipment List—All Soldiers

Soldier Mission Essential Equipment

- Army Combat Boot (Hot Weather)
- Army Combat Boot (Temperate Weather)
- Ballistic Spectacles
- Black Fleece Bib and Jacket
- Cold Weather Cap
- Combat Belt
- Commercial off-the-Shelf Socks
- Glove System
- Goggles
- Hydration System
- Improved First Aid Kit
- Modular Sleeping System
- Moisture Wicking Sports Bra
- Moisture Wicking T-Shirt
- Silk Weight Underwear
- Visual/Language Translation Card

Force Protection/Mobility

- Advanced Combat Helmet (ACH) and Accessories
- Flex Cuff*
- Helmet Repair Kit*
- Infrared (IR) Markers
- Knee and Elbow Pads

Lethality

- Modular M9 Holster*
- Three-Point Sling*

Individual Weapons Optics

- Back-up Iron Sight*
- M68 Close Combat Optic*

**Not an individual issue item*



FY05 RFI Equipment List—Additional Items for Brigade Combat Teams



FY05 RFI Equipment List—Additional Items for Brigade Combat Teams

Soldier Mission Essential Equipment

Modular Lightweight Load-Carrying
Equipment (MOLLE) Accessories*

Force Protection/Mobility

Door Ram (35-pound)
Fiber Optic Viewer
Grappling Hook
Haligan Tool (Large)
Infrared (IR) Strobe
Modular Entry Tool Kit
Modular Integrated Communications Helmet
(MICH) System and Accessories
Multi-Band Inter/Intra-Team Radio (MBITR)
Tactical Assault Ladder with Backpack

Lethality

M122A1 or M192 Lightweight Tripod
M24 Small Binoculars
M240B Combat Ammo Pack
M240B Rails
M240B/M249 Spare Barrel Bag
M249 Ammo Soft Pack
M249 Collapsible Buttstock
M249 Rails
M249 Short Barrel
M4/M16 Improved Cleaning Kit
M4 Forward Grip Bipod
M4 Improved Buttstock
Modular M9 Holster
Modular Weapon System Kit
MonoLoc (PVS-14 to Spotting Scope)
Three-Point Sling
Viper (Vector 21)/Mark VII
Weapon Light

Individual Weapons Optics

Backup Iron Sight
Improved Spotting Scope with Tripod
M145 Machine Gun Optic
M203 Day/Night Sight
M68 Close Combat Optic
TA31F—4X Advanced Combat Optical Gun Sight (ACOG)

** Includes Hydration System*



PROGRAM EXECUTIVE OFFICE SOLDIER

Project Manager Soldier Warrior

Product Manager

Air
Warrior

Product Manager

Land
Warrior

Product Manager

Mounted
Warrior

Project Manager Soldier Equipment

Product Manager

Sensors
and
Lasers

Product Manager

Clothing
and
Individual
Equipment

Project Manager Soldier Weapons

Product Manager

Crew
Served
Weapons

Product Manager

Individual
Weapons



PROJECT MANAGER SOLDIER WARRIOR

PM Soldier Warrior supports the Soldier as a system through the acquisition of all warrior systems. Air Warrior and Land Warrior programs provide significant improvements in:

- Soldier lethality
- Survivability
- Mobility
- Sustainment

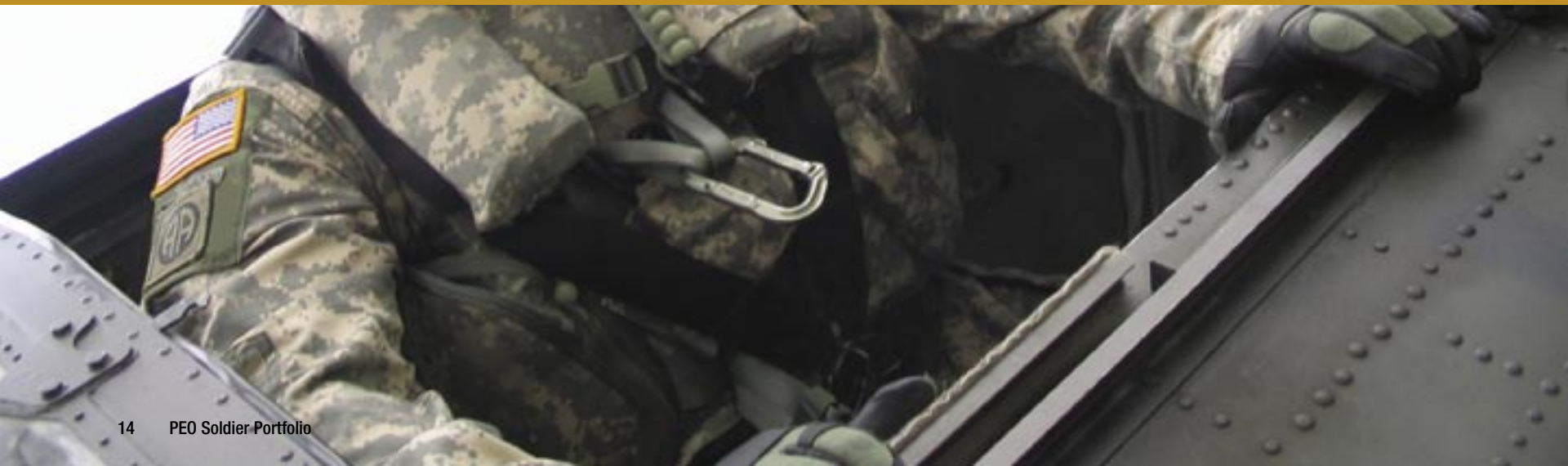
Air Warrior integrates all aviation life support and mission equipment into a single aircrew ensemble that enhances cockpit synergy and aircraft mission capability.

Land Warrior integrates the Soldier into the digital battlefield and improves individual Soldier and small unit battle command and tactical awareness.

Development is underway on the Mounted Warrior Soldier System. Mounted Warrior is an integrated system designed to improve the survivability, lethality, mobility, and sustainability of combat vehicle crewmen.



Product Manager Air Warrior



Product Manager Air Warrior develops and fields integrated Soldier systems for Army helicopter crew members. Air Warrior development leverages several joint service technology efforts to create a total, modular system that increases freedom of movement at flight controls, increases mobility to safely operate aircraft systems, enables enhanced ingress/egress from the aircraft, and, through enhanced comfort, increases mission duration time in full, mission-oriented protective posture ensemble.



Air Warrior (AW)



Mission

Enhance Army aircrew comfort, cockpit synergy, aircraft mission capability, and improve lethality, survivability, mobility, and sustainability through a new generation, integrated aircrew ensemble.

Description and Specifications

Air Warrior (AW) is a new-generation aircrew ensemble that provides advanced life support, ballistic protection, and chemical-biological (chem-bio) protection in rapidly tailorable, mission-configurable modules. The AW concept is being developed with interoperability in mind and has leveraged several joint service technology efforts. Previously, the separate development and application of all aviation life-support equipment (ALSE) and mission equipment resulted in a layered, non-integrated assemblage of protective/survival gear normally carried or worn by the aircrew member.

The system consists of components effectively integrated to maximize safe aircraft operation and human performance while not encumbering the aircrew. These components will include the Microclimate Cooling System, chem-bio protection, body armor, survival items for escape and evasion, over water survival items, and an interface to the aircraft platform.

Improvements to the AW system will be provided via a “block” approach (a time-phased, evolutionary acquisition program) to solve equipment shortcomings. AW is leveraged with the Land Warrior program. The AW system is the key ingredient in closing the performance gap that exists today between the aircrew and the aircraft. AW is answering the aviation warfighter challenges of today and tomorrow, by developing affordable, responsive, deployable, versatile, lethal, survivable, and sustainable aircrew equipment.

Aircraft Modular Survival System (AMSS)



Mission

Enable aircrew members to survive for 72 hours post-crash through supplemental survival equipment.

Description and Specifications

The **Aircraft Modular Survival System (AMSS)** is a lightweight, portable, self-contained survival kit designed to enable aircrew members to survive in most environments. The system is supplemental to the personal equipment worn and carried by the crew members. AMSS is configured to provide minimum survival equipment for each aircrew member and minimum survival equipment per aircraft to survive for 72 hours with degraded survival capability for 15 days. Components can be added to meet environmental conditions. Survival equipment is packed in containers for transportation/storage.

Aircraft Wireless Intercom System (AWIS)



Mission

Provide wireless communication between crew members during flight operations and hot refueling, loading, off-loading, and re-arming of CH/MH-47 and HH/MH/UH-60 aircraft.

Description and Specifications

The **Aircraft Wireless Intercom System (AWIS)** is a wireless communication system that consists of one aircraft interface unit (AIU), up to six mobile equipment (ME) units and one battery charger. AWIS provides:

- Full duplex, voice-activated, hands-free mode and a push-to-talk mode
- Forty aircraft with independent networks of up to six crew members in each network
- Simultaneous omnidirectional communications among all users within the aircraft network from 200 feet from the center of the aircraft

Aircrew Integrated Helmet System (AIHS), HGU-56/P Helmet



Mission

Enhance aircrew survivability, comfort, and mission effectiveness with a lighter helmet that improves impact, retention, and sound attenuation protection and is compatible with all ancillary aviation life support equipment.

Description and Specifications

The **Aircrew Integrated Helmet System (AIHS)** is constructed from an advanced composite of graphite and Spectra and is available in six sizes to fit the one percent female through the 99 percent male.

The AIHS HGU-56/P is 15-20 percent lighter than the previous SPH-4 flight helmet it replaces, as reflected in the following specifications:

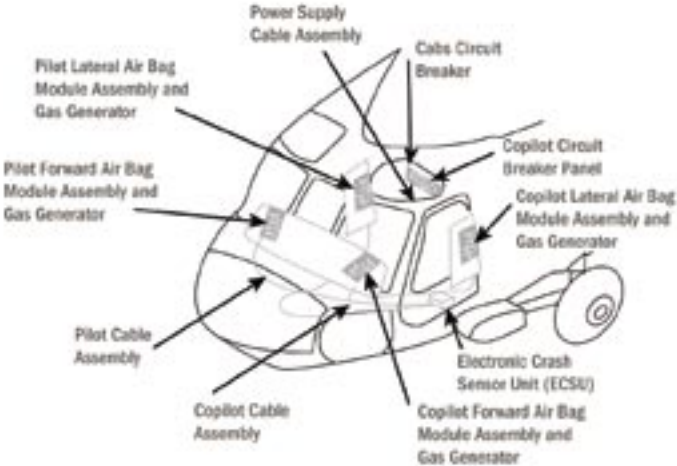
Weight: 3 pounds vs. 3.5 pounds

Resulting Impact: 150 Gs vs. 400 Gs

Chinstrap Retention: 440 pounds vs. 300 pounds

Acoustic: 82 db(A) vs. 85 db(A)

Cockpit Air Bags System (CABS)



Mission

Save lives and prevent or reduce injuries by protecting the aircrew from multiple cockpit strike hazards with a crash-activated, inflatable protection system.

Description and Specifications

There are multiple strike hazards present within the cockpit, including the cyclic and collective sticks, armor panels, instrument panels, glare shields, doors, and gun sights. The **Cockpit Air Bags System (CABS)** reduces flail and protects the aviator from strike hazards with the air bag. CABS is a crash-activated, inflatable protection system designed to supplement the current restraint systems on helicopters. Although the system concept is similar to automotive air bags, CABS has been designed specifically for rotary wing applications.

The crash sensor is a solid-state, electronic device that senses accelerations in three axes for a greater refinement of crash data inputs over its automotive counterparts. The gas generator/air bag assembly has been designed to operate within the confines of a helicopter cockpit, allowing extended occupant protection for secondary impacts, while allowing unobstructed egress from the aircraft after deployment. Qualification testing addressed safety and airworthiness requirements, as well as suitability for use in Army weapon systems. When a crash occurs, the electronic crash sensor unit senses it and triggers inflation of air bags, thus providing supplemental restraint for the Army aviator that prevents or mitigates injuries and death.

Communication Ear Plugs (CEP)



EXTERNAL EAR

Mission

Provide improved sound attenuation and improved speech intelligibility for Army aircrews.

Description and Specifications

Communication Ear Plugs (CEP) are being added to the HGU-56/P (Aircrew Integrated Helmet System AIHS) helmet through a Modification Work Order (MWO). CEP is a pair of small sound transducers paired with hollow foam ear tips. The foam ear tips increase the sound attenuation already provided by the HGU-56/P's ear cups and the sound transducers provide a clear signal through the hollow foam ear tips. As a result, the Soldier hears very clear communications not degraded by ambient noise.

Electronic Data Manager (EDM)



Mission

Enable the aircrew member to quickly plan missions and react to mission changes in flight.

Description and Specifications

The **Electronic Data Manager (EDM)** provides a user-friendly kneeboard computer with an internal GPS, moving map capability, sunlight readability, and the capability to use Windows-based software to replace current kneeboard. The EDM:

- Displays moving maps (aircraft position and waypoints)
- Imports mission planning data
- Provides capability for weight and balance calculations
- Provides capability for aircraft performance planning calculations
- Provides capability for electronic notes

Helicopter Oxygen System (HOS)



Mission

Provide approximately one and a half hours of oxygen service for six personnel for high-altitude and certain search-and-rescue operations with utility and cargo helicopters.

Description and Specifications

The **Helicopter Oxygen System (HOS)** is a portable, multi-user oxygen system for high-altitude operations as well as search-and-rescue operations for selected units with utility and cargo helicopters. HOS is integrated with the standard MBU-12/P Oxygen Mask mounted to aviation helmets. The system is used by all services and weighs approximately 125 pounds. No aircraft modification is required. HOS works up to 25,000 feet mean sea level.

Joint Advanced Laser Eye Protection Visor (JALEPV)



Mission

Protect the eyes of aircrew members from low energy laser hazards and threats.

Description and Specifications

The **Joint Advanced Laser Eye Protection Visor (JALEPV)** program is a joint Army-Navy development program led by the Navy to produce laser eye protection in a visor format. This polycarbonate ballistic visor utilizes holographic, dielectric reflective, and dye technologies to provide aircrew protection from multiple threat wavelengths. This visor is being fabricated for the Army in the HGU-56/P configuration. It will be suitable for day or unaided night flight, providing greater than 20 percent scotopic transmission. Current protection includes the 2- and 3-wavelength HGU-56/P visors and the 4-wavelength **Clear Laser Eye Protection for Infrared (CLEPIR)** spectacles.

Maxillofacial Shield (MFS)



Mission

Provide maxillofacial ballistic protection for Army aircrew wearing the HGU-56/P helmet, compatible with visors, Aviator Night Vision Imaging System, Communication Ear Plugs, spectacles, microphones, and lip lights.

Description and Specifications

The **Maxillofacial Shield (MFS)** provides maxillofacial ballistic protection from spall. It also provides improved field of view and antifogging over previous MFS design. MFS is compatible with the HGU-56/P visors, ANVIS, CEP, spectacles, microphones, and lip lights.

Microclimate Cooling System (MCS)



Mission

Protect the individual aircrew member from heatstroke with personal climate control in chemical or biological warfare or hot weather environments.

Description and Specifications

The **Microclimate Cooling System (MCS)** reduces heat stress to Army helicopter crew members, especially when wearing chemical protective equipment in hot weather. The MCS provides a combat advantage to Army aviation by providing an increase of more than 350 percent (from 1.6 hours to 5.7 hours) in heat stress mission endurance times in chemical protective equipment.

The MCS includes a **Microclimate Cooling Garment** (vest), worn as an undergarment, and a small **Microclimate Cooling Unit (MCU)** that chills water and pumps it through small tubes embedded in the vest. The vest is worn beneath chemical protective clothing or other crew member clothing. The system enables crew members to function in chemical, biological, or hot environments without suffering heat stress.

SRU-37/P One-Man Life Raft and Container



Mission

Enable Army aircrew members downed over water to remain afloat until they can be retrieved.

Description and Specifications

The **SRU-37/P One-Man Life Raft and Container** is a self-inflating V-bottom raft for use by aircrew members and passengers required to fly over water. It enables aircrew and passengers able to exit from downed aircraft to remain afloat until they are retrieved. The raft can also be used for fording rivers and streams or as a shelter in a survival scenario. It is fabricated from heat-sealed, polyurethane-coated cloth and is packaged for chest or back mounting in a cross-strap container. The raft is managed by the Navy while the container is managed by the U.S. Aviation and Missile Command (AMCOM) (B-17).



Product Manager Land Warrior



Product Manager Land Warrior is developing the integrated Soldier System for Ground Soldiers. The system provides significant improvements in Soldier tactical awareness, lethality, survivability, mobility, and sustainment. Land Warrior's improved battle command and tactical awareness will improve individual and small unit combat effectiveness and reduce fratricide incidents among individual Soldiers.



Dismounted Battle Command System (DBCS)



Commander's Digital Assistant (CDA)



MicroLight Enhanced Position Location
Reporting System (EPLRS) Radio



Mission

Enhance situational awareness, support communications, provide Blue Force Tracking, and provide leaders with a capability for mission planning and support.

Description and Specifications

The **Dismounted Battle Command System (DBCS)**, an early spiral-out from Land Warrior, will improve infantry unit battle command and tactical awareness. DBCS provides an integrated, networked command and control capability with situational awareness from the brigade to the dismounted leader at the team level. DBCS has two configurations, one for the platoon leader and one for squad/team leaders. The squad/team leader configuration is DBCS with **Microlight Enhanced Position Location Reporting System (EPLRS) Radio** embedded in a tactical load-carrying vest (hands-free operation). The platoon leader configuration includes Microlight EPLRS plus a **Commander's Digital Assistant (CDA)**.

Microlight EPLRS is a fully functional, downsized variant of the RT-1720G EPLRS radio. It operates at user selectable power outputs and is capable of implementing all current and future EPLRS modes.

CDA includes a computer processor and disk with embedded communications.

DBCS begins fielding in FY05 to provide an immediate improvement in tactical awareness and battle command in support of the War on Terrorism.

Dismounted-Combat ID Marking System (D-CIMS)



Mission

Prevent fratricide with vehicle-to-soldier marking and identification system.

Description and Specifications

Dismounted-Combat ID Marking System (D-CIMS) uses negative thermal material in the form of a helmet cover. D-CIMS is low-cost, lightweight, and does not require power. It is identifiable through thermal sights in the mid- to far-infrared spectrum out to 2 kilometers. The material has the same export/sales controls as night vision devices.

GloTape and Soldier Combat Helmet Identification Marking System (SCHIMS)



Mission

Reduce fratricide risks through friendly-forces marking equipment.

Description and Specifications

The Combined Forces Land Component Command-approved Soldier marking configuration is a one-inch **GloTape** square on each shoulder and three-inch **GloTape Soldier Combat Helmet Identification Marking System** (SCHIMS) on the helmet. GloTape and SCHIMS are visible to helmet and weapon mounted image intensification devices out to 800 meters.

Land Warrior (LW)



Mission

Provide significant improvement in Soldier tactical awareness, lethality, survivability, battle command, mobility, sustainment, and training and mission rehearsal.

Description and Specifications

Land Warrior (LW) is an integrated, modular fighting system for infantry Soldiers and Soldiers in support of the close fight. LW combines an assortment of up-to-date commercial off-the-shelf and government technologies with newly developed components and technologies to create a lethal, survivable Soldier system linked into the digitized battlefield. LW combines computers, lasers, geolocation, and radios with Soldiers' mission equipment to achieve the Army Vision of enhancing the individual Soldier's close combat tactical effectiveness. LW will interoperate with other Army systems as well as other U.S. services and allied military systems. The systems approach optimizes and integrates these capabilities while minimizing impact on the Soldier's combat load and logistical footprint.

Multiband Inter/Intra Team Radio (MBITR) AN/PRC-148(V)(C)



Mission

Provide handheld inter- and intra-team radio voice and data communications in an upgradable, lightweight, software-based device.

Description and Specifications

The **Multiband Inter/Intra Team Radio (MBITR)** is a rugged radio weighing less than two pounds. It provides interoperability with existing legacy systems and commercial radios, while ensuring future operation with the next generation of communications equipment.

Seven programmable devices supported by flash memory are incorporated into the MBITR architecture, creating a truly software-based handheld radio. MBITR's combination of software upgradability, and 30-512 MHz AM/FM RF capability meets the following current and future communications requirements:

- 30-512 MHz contiguous coverage
- AM/FM voice/data selectable RF output power (100 mwatts to 5 watts) Type I COMSEC
- Immersible to two meters (urban version)
- Less than 29 ounces, 334 cubic inches



Product Manager Mounted Warrior



Product Manager Mounted Warrior develops and fields integrated Soldier Systems for combat vehicle crewmen. The Mounted Warrior Soldier System is an integrated approach to equipping the mounted crewman and select maneuver support/maneuver sustainment Soldiers to fight, survive, and win across the full spectrum of operations. The complete system links mounted crewmen to their platform sensors and available command, control, communications, computers, information, surveillance and reconnaissance equipment organic to their individual units and provides enhanced soldier protection.



Mounted Warrior (MW)



Mission

Improve the survivability, lethality, mobility, and sustainability of combat vehicle crewmen.

Description and Specifications

The **Mounted Warrior (MW)** Soldier system leverages capabilities developed in other warrior programs such as Land Warrior and Air Warrior. An integrated system of systems, it combines computers, radios, and displays with Soldier mission equipment, and will outfit every crew member, including vehicle commander, driver, and gunner, who operates any ground platform. Systems and components include the following:

- Integrated headgear with helmet mounted display to provide remote viewing of platform-based displays and optical sensors such as thermal sights
- Tactical voice activation system
- Integrated individual soldier computer/radio/cordless communications
- Enhancements to protective clothing and individual equipment

MW enables crew members to communicate wirelessly both dismounted and mounted with other crew members or Land Warrior-equipped soldiers. The system interfaces with other Army communications and command and control systems. MW includes lightweight, modular, mission-tailorable, integrated equipment and communications, command and control, and computers (C4) devices, worn, carried or used by crewmen when conducting tactical operations with their assigned combat vehicles.

Future Force Warrior and the Ground Soldier System



Mission

Develop and field a lightweight, overwhelmingly lethal, fully integrated individual combat system, including head-to-toe individual protection, networked communications, Soldier-worn power sources, and enhanced human performance.

Description and Specifications

The **Ground Soldier System (GSS)** is the next generation of the Land Warrior integrated, modular fighting system. GSS will be completely integrated within the Future Combat Systems (FCS) Unit of Action (UA). GSS will include the following capabilities:

- An ultra-lightweight, low bulk, multi-functional, full spectrum protective combat ensemble
- Networked, robust individual and team communications
- State-of-the-art distributed and fused sensors, organic tactical intelligence collection assets, and enhanced situational understanding
- Interoperability with FCS network, platforms, and robotics to produce netted fires and overmatched lethality
- Embedded training, on-the-move planning and rehearsal
- Seventy-two hour continuous autonomous team operations using high-density, low weight/volume, self-generating/re-generating, reliable, safe power sources
- Unconstrained vertical and lateral combat movement capability
- Small combat unit synergistic capabilities and heightened team effectiveness
- Optimized cognitive and physical fightability, on-board physiological/medical sensor suite with enhanced prompt casualty care.

GSS will employ a system-of-systems approach, optimizing and integrating capabilities while reducing the Soldier's

combat load and logistical footprint. Soldier system spiral development begun with Land Warrior will continue with GSS, integrating those successful Soldier system technologies developed in the Future Force Warrior Science and Technology program. GSS will eventually provide warrior system capabilities for all dismounted, maneuver support, and maneuver sustainment Future Force Soldiers.

In order to comply with FY05 Congressional language mandating consolidation of the Future Force Warrior Advanced Technology Demonstration (FFW ATD) with Land Warrior, Project Manager Soldier Warrior and Technical Program Office FFW personnel have consolidated efforts to jointly develop the Ground Soldier System (GSS). GSS requirements are described in one of four Capability Development Documents (CDDs) that comprise the Soldier as a system. At the end of the ATD, GSS will transition to system development and demonstration (SDD) and be fielded to the Future Force in FY10. GSS integrates Soldier system components into a lightweight, overwhelmingly lethal, fully integrated individual combat system. It includes head-to-toe individual protection, networked communications for increased situational awareness and lethality, extended duration Soldier-worn power sources, physiological monitoring, embedded training capability, and enhanced individual and team performance.



PROGRAM EXECUTIVE OFFICE SOLDIER

Project Manager Soldier Warrior

Product
Manager

Air
Warrior

Product
Manager

Land
Warrior

Product
Manager

Mounted
Warrior

Project Manager Soldier Equipment

Product
Manager

Sensors
and
Lasers

Product
Manager

Clothing
and
Individual
Equipment

Project Manager Soldier Weapons

Product
Manager

Crew
Served
Weapons

Product
Manager

Individual
Weapons



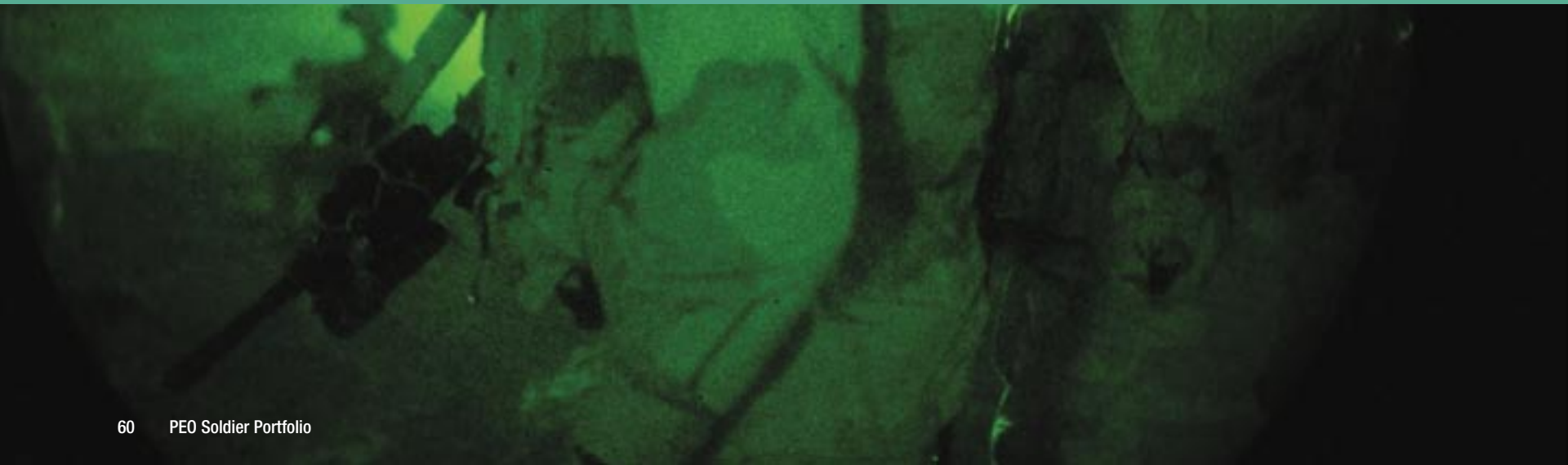
PROJECT MANAGER SOLDIER EQUIPMENT

PM Soldier Equipment develops, fields, and sustains the world's best Soldier equipment to advance Soldiers' warfighting capabilities by procuring, adapting, or developing state-of-the-art sensors, lasers, clothing, and other individual equipment, including:

- Man-portable laser/light technologies for pointing and illumination, range-finding, and target designation
- Night vision capabilities
- Ballistic and fragmentation protection
- Technologically advanced tactical and environmental protective clothing
- Individual chemical protective gear
- Personnel airdrop equipment



Product Manager Sensors and Lasers



PM Sensors and Lasers (PM-SSL) enables Soldiers on the ground or in the air to “own the night” by providing them technologies that enhance the lethality of individual and crew-served weapon systems and that improves situational awareness through three core technologies; image intensification, forward looking infrared, and lasers:

- Image intensification (I2) devices provide Soldiers and aviators improved night vision and increased situational awareness. Aviation devices enable flight operations under very low ambient light conditions and permit focus outside the aircraft for increased safety.
- Enhanced Night Vision Goggles (ENVG) provide image fusion by combining imagery from image intensification and thermal sensors into a common image.
- Cooled and uncooled thermal (FLIR) sensors provide Soldiers with surveillance and fire control capability for individual and crew served weapons during degraded battlefield visibility conditions, enabling accurate detection, acquisition, and engagement of targets in all battlefield conditions.
- Infrared and laser technology enable Soldiers to accurately utilize individual and crew served weapons during night engagements, provides laser target location range-finding as well as laser-designation capability.



AN/AVS-6 Aviator's Night Vision Imaging System (ANVIS)



Mission

Enable aviators to operate more effectively and safely day or night and under degraded battlefield conditions through night vision image intensification systems.

Description and Specifications

The **AN/AVS-6 Aviator's Night Vision Imaging System (ANVIS)** is a helmet-mounted, direct-view, third-generation, image-intensification pilotage device that enables flight operations under very low ambient light conditions. Power is supplied by a helmet-mounted dual battery pack or, optionally, from aircraft-supplied power.

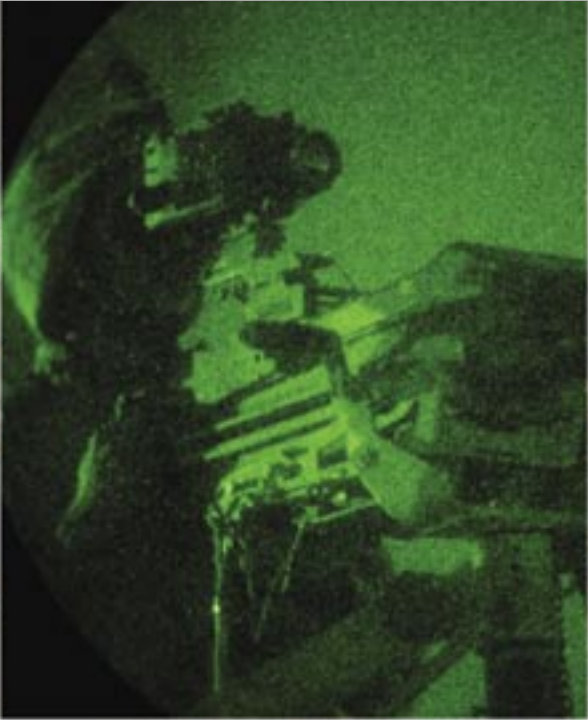
The AN/AVS-6 or ANVIS-6, used by the Army, has lenses incorporating class-A minus-blue filtering, which significantly reduces the radiance of the low night sky. The ANVIS-6 has been issued in several versions since its original fielding in the mid-1980s. First was the AN/AVS-6(V)1 with early third generation tubes effective to approximately quarter-moon conditions, 15mm eye relief, and single eyespan adjustment knob. The AN/AVS-6(V)2 was identical to the (V)1 except that it had an offset mounting arrangement specially designed for the Cobra helicopter. The AN/AVS-6(V)1A had improved tubes capable of operating down to about starlight conditions, 25mm eye relief, and dual eyespan adjustment knobs.

The AN/AVS-6(V)3 incorporates all the improvements of the (V)1A plus enhanced third generation technology (a combination of new, gated power supply technology and thin-film tube design), a new fine-focus objective lens, and a new low-profile battery pack. The low-light sensitivity of the (V)3 exceeds that of the (V)1A by about 10 percent and that of the earliest (V)1 by about 35-40 percent. Additionally, the gated power supply enables the (V)3 to operate in significantly higher light level conditions than any of the previous designs. All ANVIS are capable of operating for 24 hours or more on one pair of AA batteries.

AN/PAS-13 Thermal Weapon Sight (TWS)



Light Thermal Weapon Sight



Heavy Thermal Weapon Sight



Medium Thermal Weapon Sight



Mission

Enable the soldier to detect and engage targets day or night in all weather and obscurant conditions.

Description and Specifications

The AN/PAS-13 Thermal Weapon Sight (TWS) family enables Soldiers with individual and crew served weapons to see deep into the battlefield, increase surveillance and target acquisition range, and penetrate obscurants, day or night.

The TWS family represents a substantial improvement over the image-intensifier night sights currently in use for small arms. TWS is a second-generation forward looking infrared (FLIR) that is digital battlefield-compatible, and provides a standard video output for training, image transfer, or remote viewing.

The Heavy TWS is the night sight with a few modifications (spacer, eye cup, and unique reticle) for the M107.

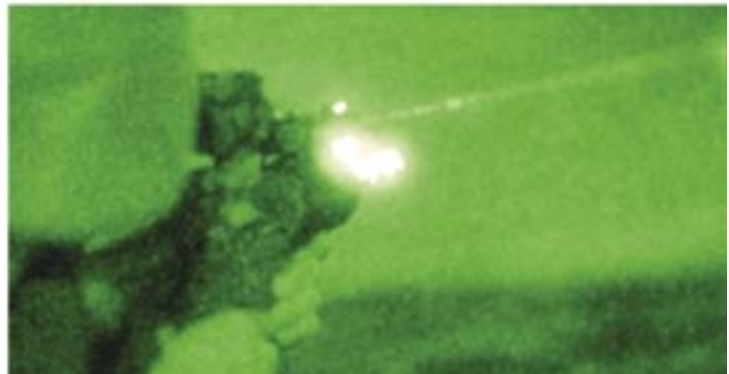
TWS Family	Range	Weight (TWS/TWSII)	Field of View	Weapons Supported
Light TWS	550m	3.0/1.8 pounds	15 degrees	M16, M4, M136
Medium TWS	1100m	5.0/2.8 pounds	6 and 18 degrees	M249, M240B
Heavy TWS	2200m	5.3/3.9 pounds	3 and 9 degrees	M2, M107, MK19, M24, M4/M16 Squad Leader

AN/PEQ-2A and AN/PAQ-4C Aiming Lights



AN/PEQ-2A

AN/PAQ-4C



Mission

Provide the Soldier with highly accurate laser weapon-aiming capability—in darkness at maximum firing distances—when used in conjunction with appropriate image intensification devices.

Description and Specifications

The **AN/PAQ-4C** is used in conjunction with night vision goggles to engage targets at night. When zeroed to the weapon, this device provides an invisible continuous infrared beam along the weapon's line of fire, designating the point of impact on the target.

Included with the AN/PAQ-4C is its hard carrying case, operator's and unit maintenance manual, a Rail Grabber Bracket Assembly (IAW MIL-STD-1913), two AA batteries, an M4/M16A2 Universal Bracket, a 25-inch remote cable switch, a 20-inch remote cable switch, a Multiple Independent Laser Engagement System (MILES) training extender, a switch lever shroud, and cable hangers.

The **AN/PEQ-2A Target Pointer/Illuminator/Aiming Light (TPIAL)** is a class IIIB laser that emits a highly collimated beam of invisible infrared light for precise aiming of a Soldier's weapon as well as separate invisible infrared illumination with adjustable focus. The AN/PEQ-2A is equipped with a safety block for training that limits the operator from unintentionally selecting the high power, non-eye safe operating modes. Both the aiming and illuminator beams can be zeroed to the weapon and to each other, and can be operated individually or in combination.

The AN/PEQ-2A is intended for use with night vision devices, and can be used either as a handheld illuminator/pointer, or can be weapon-mounted with included hardware. Included with the AN/PEQ-2A is its carrying case, operator's and unit maintenance manual, a 12-inch membrane cable switch, a Rail Grabber Bracket Assembly (IAW MIL-STD-1913), two AA batteries, two retention straps, a neck cord, and an accessory kit containing an M4/M16A2 Universal Bracket, a 25-inch remote cable switch, a 20-inch remote cable switch, a MILES training extender, and a bracket adapter for mounting the TPIAL to U.S. military standard M60 and M2 brackets.

AN/PVS-7D and AN/PVS-14 Night Vision Devices



AN/PVS-14 Night Vision Device



AN/PVS-7D Night Vision Device



Mission

Provide Soldiers with improved night vision and increased situational awareness.

Description and Specifications

The **AN/PVS-7D** is the standard issue goggle supplied to the U.S. military and its allies. It features simple user controls and fully automated image tube protection. This system allows the user to have complete freedom of movement while maintaining equilibrium in a hands-free application. The AN/PVS-7D also incorporates an infrared (IR) illuminator with a momentary and continuous-on switching function. IR operation and low battery indicators are displayed within the user's field of view. The AN/PVS-7D comes complete with a lightweight, fully adjustable military head strap that allows for comfortable long-term use. A wide range of optional accessories includes high magnification lenses, compass, IR spot/flood lens, and helmet mounting bracket.

The **AN/PVS-14** is a lightweight, multipurpose, monocular night vision device with similar key features found in the AN/PVS-7D single tube night vision goggles. The objective and eyepiece assemblies allow attachment of similar accessories. The head/helmet mount adapter is exactly the same. Also available is a weapon mount adapter to allow the system to be mounted on the M16/M4 Picatinny rail. A long list of optional accessories allows configuration to meet all requirements.

The system also features a projected IR, light-emitting diode for short range illumination for activities such as map reading. The AN/PVS-14 is supplied with the military head strap for hands-free use and has many optional accessories. Each system includes the AN/PVS-14, military head strap, sacrificial window, de-mist shield, batteries, manual, and carry case.

AN/PVS-10 Sniper Night Sight (SNS)



Mission

Enable accurate acquisition and engagement of targets to ranges of 800 meters (day) and 600 meters (night) with the M24 sniper weapon.

Description and Specifications

The **AN/PVS-10 Sniper Night Sight (SNS)** is a lightweight, weapon-mounted, self-contained, image-intensified, passive device designed primarily for use by the sniper for day and night operations. A lever enables the user to change between day and night modes of operation. SNS employs a variable gain image tube that can be adjusted depending on ambient light levels. SNS includes a reticle that can be used either as a blackline reticle for daytime use or illuminated for night operation when required. An eyepiece diopter adjustment is provided so SNS can be used without corrective glasses. A rail mounting interface is integrated into the base of the sight to permit the sight to be quickly mounted to or dismounted from the weapon.

Enhanced Night Vision Goggle (ENVG) (Image Intensifier and Infrared Capabilities)



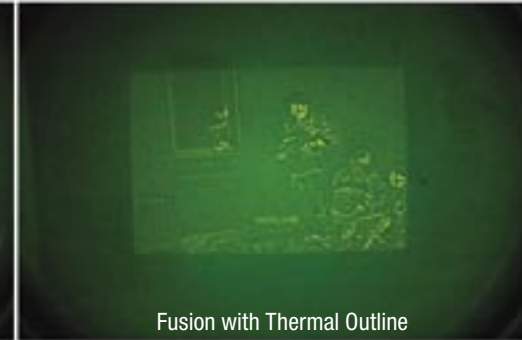
Full Thermal (White Hot)



Full Thermal with Thermal Outline



Image Intensifier Only



Fusion with Thermal Outline



Full Thermal (Black Hot)

Mission

Provide the individual Soldier with the ability to enhance mobility and situational awareness day or night in all weather and battlefield obscurant conditions.

Description and Specifications

The **Enhanced Night Vision Goggle (ENVG)** is a helmet-mounted passive device for the individual Soldier. It optically overlays imagery from an image intensification (I2) tube and a long wave infrared sensor into a combined image. This optical fusion technique will enable the Soldier to carry out missions under a variety of operating conditions.

Plans for the ENVG program include upgrading to a digital package. Digital ENVG will take advantage of image processing techniques to improve the image clarity and situational awareness for the Soldier. A digital system lends itself to the battlefield of the future: it can instantaneously import and export digital files (data/map injection). Performance requirements for ENVG include:

Man-sized target recognition requirements:

80 percent probability at 150 meters, given a detection

50 percent probability at 300 meters, given a detection

Weight (maximum): Two pounds including batteries

Magnification: 1x

Continuous operation: 7.5 hours continuous fusion, plus an additional 7.5 hours of image intensification only with no battery change

Compatibility: Infrared aiming lights (AN/PEQ-2, AN/PAQ-4)

Integrated Laser/White Light Pointer (ILWLP)



Mission

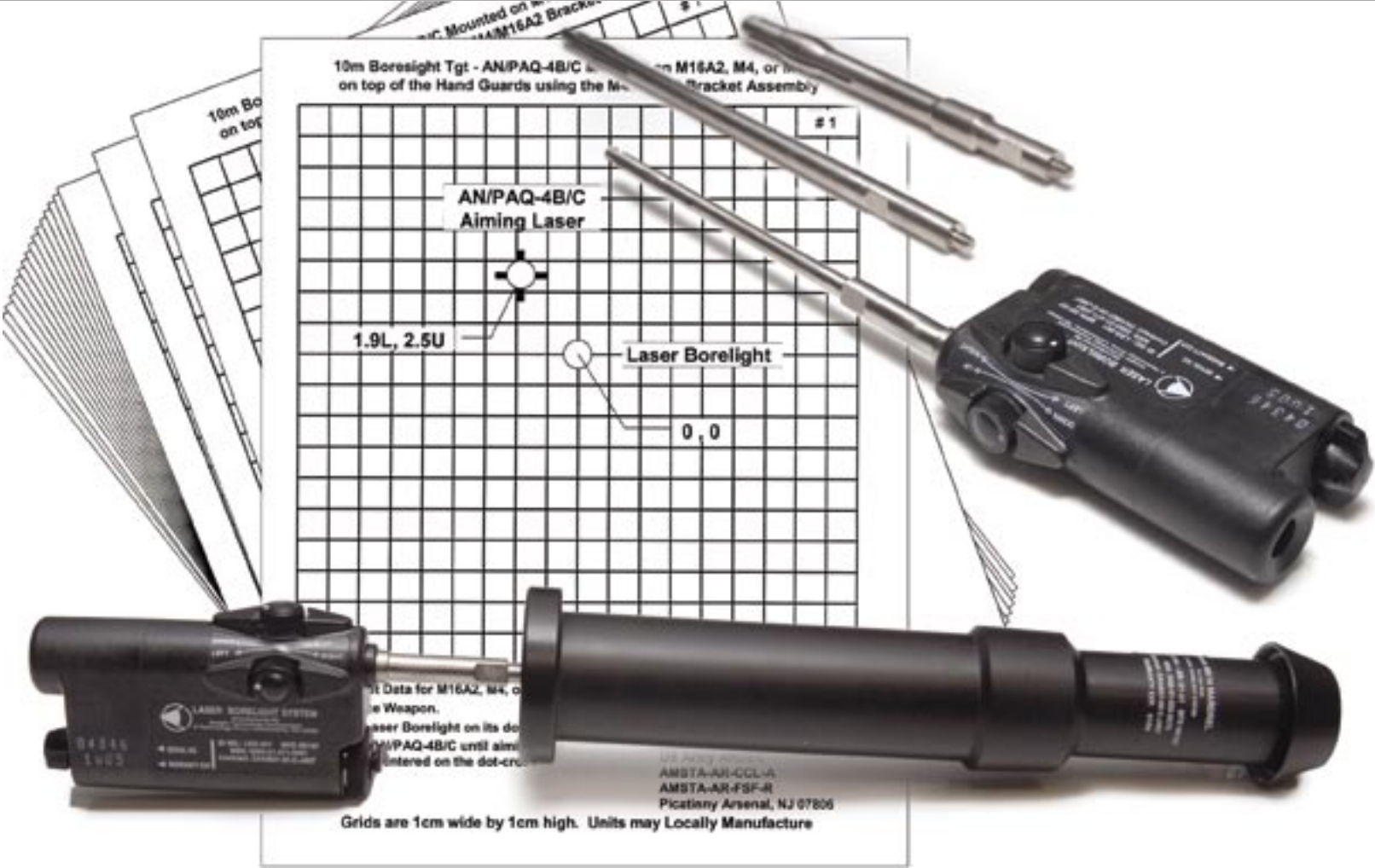
Enable acquisition and engagement of targets in low light or total darkness using either unaided vision or night vision devices, especially in an urban environment.

Description and Specifications

The **Integrated Laser/White Light Pointer (ILWLP)** combines the capability to acquire and engage targets during close quarters combat engagements in low-light conditions or in total darkness using a single, lightweight device. The ILWLP, handheld or mounted on the pistol, enables the employment of white light illumination (flashlight), visible, or infrared (IR) aiming lasers, and IR illumination.

The ILWLP weighs less than six ounces and attaches to the M9 and M11 pistol with a MIL-STD-1913 rail adapter and uses common, disposable batteries. It has a visible aiming laser range of 25 meters in daylight, and a flashlight that provides facial recognition out to 20 meters. The ILWLP has IR aiming and illumination capability beyond the maximum effective range of the weapon.

Laser Borelight System (LBS) AN/PEM-1



Mission

Enable precise zeroing of aiming lights, weapon sights, and iron sights on all 5.56mm, 7.62mm, and .50 caliber weapons, and the MK19 Grenade Machine Gun, to reduce weapons zeroing time and cost.

Description and Specifications

The **Laser Borelight System (LBS) AN/PEM-1** is a rugged projector of visible laser light that enables the boresighting of weapons during daylight, low light, and darkness without discharging the weapon. LBS is used to boresight the Thermal Weapon Sight (TWS), AN/PAS-13; the Infrared Aiming Light, AN/PAQ-4B/C; the Target Pointer Illuminator Aiming Laser, AN/PEQ-2/2A; the Close Combat Optic, M68; the M145 Machine Gun Optic; the Individual Crew Served Weapon Sight, AN/PVS-4; the Crew Served Weapon Sight, AN/TVS-5; the iron sights/backup iron sights; and other sighting devices to the weapons systems to which they are attached. LBS is also used to boresight the various sighting devices that can be mounted/attached to the 40mm, MK19 machine gun.

Major LBS components are: the laser borelight, 5.56mm, 7.62mm, and .50 caliber mandrels, and a set of 38 boresighting targets. A mandrel for the MK19 GMG is an additional authorized item and is issued based on one mandrel per two MK19s authorized.

Lightweight Laser Designator Rangefinder (LLDR) AN/PED-1



Mission

Provide U.S. Army fire support teams and forward observers with a man-portable capability to observe and accurately locate targets, digitally transmit target location data to the tactical network, and laser-designate high-priority targets for destruction by precision munitions.

Description and Specifications

The **Lightweight Laser Designator Rangefinder (LLDR) AN/PED-1** is a man-portable, modular target location and laser designation system. The two primary components are the **Target Locator Module (TLM)** and the **Laser Designator Module (LDM)**. The TLM can be used as a stand-alone device or in conjunction with the LDM. Total system weight to conduct a 24-hour mission is 35 pounds.

The TLM incorporates a thermal imager, day camera, electronic display, eye-safe laser rangefinder, digital magnetic compass, Global Positioning System (GPS) electronics, and digital export capability. The TLM has an integral capability for boresighting with the LDM, enabling the operator to see the laser spot and align the system. At night and in battlefield conditions, the operator can recognize vehicle-sized targets at ranges greater than 2.5 kilometers. During day operations, targets can be recognized at ranges greater than 6 kilometers. At a range of 10 kilometers, targets can be located to within 50 meters.

The LDM emits coded laser pulses compatible with DOD and NATO laser-guided munitions. Targets can be designated at ranges greater than 5 kilometers.

Lightweight Video Reconnaissance System (LVRS)



Mission

Provide special operations commanders with near real-time images that can be used in conjunction with verbal and written reports from reconnaissance and surveillance elements to facilitate planning and preparation for combat units and increase light force survivability.

Description and Specifications

The **Lightweight Video Reconnaissance System (LVRS)** consists of a man-portable out-station used by surveillance, reconnaissance, or scout teams to capture, compress, and transmit still frame images over military communications back to a base station at higher echelon. Base stations will receive still frame images from out-stations and can exchange still frame images with other base stations. Performance requirements for LVRS include:

Field of View

Wide = 10 degrees H x 7 degrees V

Narrow ~ 0.4 degree H x 0.28 degree V

Weight (maximum) ~ 17.8 pounds

Range (Out-Station to Target)

Day = 1,500 meters

Night = 500 meters

(Clear starlight 0.0001 foot-candles)

Continuous Operation = 8 hours

MK VII Target Locator



Mission

Provide fire support teams and forward observers with daylight and limited night capability to observe and accurately locate targets for voice transmission of target data to the fire support command, control, communications, computers, and intelligence system.

Description and Specifications

The **MK VII Target Locator** is a handheld or tripod-mounted lightweight laser target locator incorporating an eyesafe laser rangefinder and a digital magnetic compass to determine range, azimuth, and vertical angle from the observer to targets of interest. When targeting data is sent to a Precision Lightweight GPS Receiver (PLGR), the system can compute and display target location. Mark VII can range to tactical targets out to 5 kilometers on a 7-kilometer visibility day. Maximum rangefinding capability on a clear day is 9,998 meters. Range accuracy is ± 3 meters. Azimuth accuracy is ± 10 artillery mils. An internal image intensifier is incorporated for night operations. Night capability to tactical targets is approximately 500 meters. The day optic is a 7.25-power monocular. Night optics are 4-power.

Handheld weight: 4.2 pounds

Total system weight: 6 pounds total carry weight

Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF)



I-STORM

STORM

Mission

Enable dismounted Soldier leaders to accurately determine far target and terrain locations through the use of laser rangefinding and digital direction-finding, and to control night firing with a laser pointer and illuminator.

Description and Specifications

The **Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF)** is a single, compact, weapon-mountable, self-contained laser rangefinder with integral multifunction lasers capable of being used with the Land Warrior suite or in a stand-alone mode. It contains a laser rangefinder (LRF), digital magnetic compass (DMC), visible aiming laser, infrared aiming laser, and infrared illuminator. The STORM also contains a Multiple Integrated Laser Engagement System (MILES) training laser that works as the interrogator portion of the MILES Tactical Engagement System (TES). The laser rangefinder and aiming lasers can be aligned to the bore of the individual weapon.

Rangefinder

Maximum Range	9,995 meters
Minimum Range	25 meters
Range Accuracy	+/- 1.5 meters
Probability of Detection	99 percent against a standard NATO frontal tank at 1.5 kilometers

Digital Compass

Azimuth Pointing Accuracy	10-30 artillery mils
Elevation and Bank Pointing Accuracy	10 artillery mils
Elevation and Bank Pointing Range	+/- 45 degrees

Pointers and Illuminator (Starlight Conditions)

IR Illumination Range: High/Low	2,000/600 meters
IR Pointing Range: High/Low	2,000/600 meters
Visible Pointing Range	1,000/600 meters

STORM MLRF Size, Weight, and Power

Characteristics

Weight (w/battery)	1.2 pounds
Length	6.5 inches
Width	3.5 inches
Height	1.8 inches
Battery	2 DL123 3-volt lithium

Viper Target Location System



Mission

Provide fire support teams and forward observers with daylight and limited night capability to observe and accurately locate targets for voice transmission of target data to the fire support command, control, communications, computers, and intelligence system.

Description and Specifications

Viper is the brand name of a Vectronix product that integrates a Vector Binocular Laser Rangefinder (BLRF) with a Precision Lightweight GPS Receiver (PLGR) equipped with PLGR+96 software to provide grid coordinates to a target.

The Vector BLRF is ruggedized, waterproof, weighs about 60 ounces, is powered by lithium batteries, and has an approximate range of four kilometers (2.5 miles) on a clear (20-kilometer = 12-mile visibility) day. The Vector BLRF provides range, magnetic azimuth, and vertical-angle measurement to the PLGR, which calculates the location of the far target.

The Viper can locate targets to within 45 meters out to a range of 4 kilometers. The Viper system also includes a tripod, an AN/PVS-14 Monocular Night Vision Device and a Mounting Bracket for the AN/PVS-14. The AN/PVS-14 provides a limited night capability for the system of approximately 500 meters. The AN/PVS-14, PLGR and PLGR+96 software are provided as U.S. Government furnished equipment.

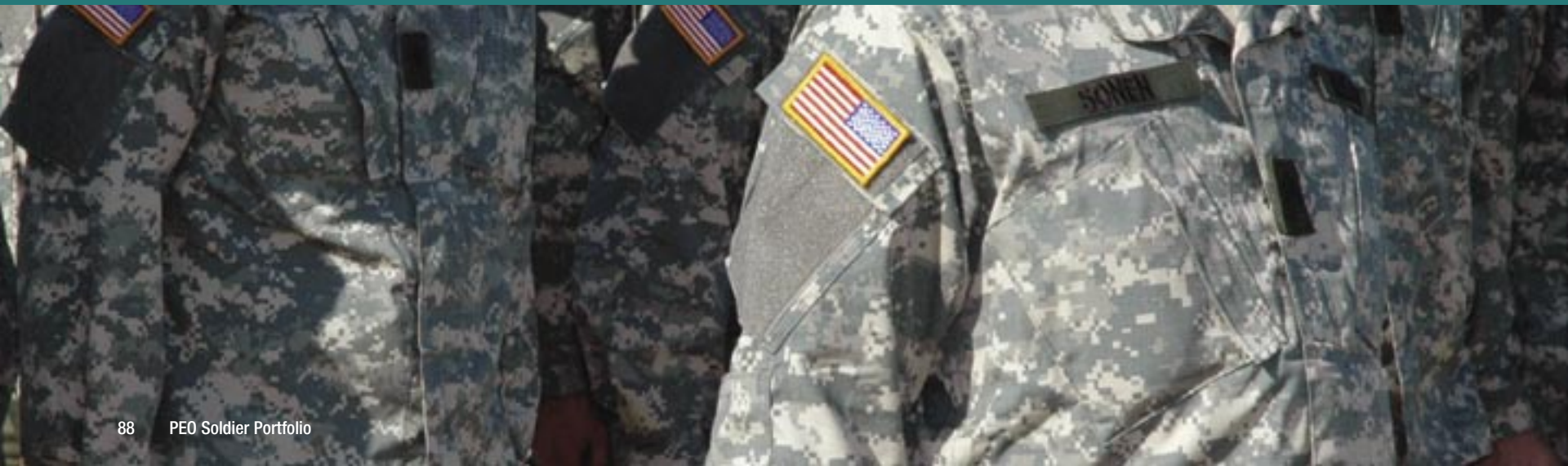
Handheld weight: 3.8 pounds

Total system weight (daylight operation): 5.9 pounds

Total system weight (night operation): 9.2 pounds



Product Manager Clothing and Individual Equipment



Product Manager Clothing and Individual Equipment (CIE) supports Soldiers in operational environments and improves their lethality, survivability, situational awareness, health, safety, mobility, and sustainability by providing state-of-the-art ballistic protection and safe, durable, and operationally effective individual and unit equipment. CIE enhances survivability through technologically advanced tactical and environmental protective clothing and individual chemical protective gear.



Advanced Bomb Suit (ABS)



Mission

Protect explosive ordnance disposal personnel against the effects of exploding and unexploded ordnance and improvised explosive devices.

Description and Specifications

The **Advanced Bomb Suit (ABS)** is a full-body protective ensemble that will protect the Explosive Ordnance Disposal Soldier from fragmentation, blast overpressure (BOP), impact, heat, and flame. This program will leverage new material technology and design to improve protection, comfort, and ergonomics. To minimize weight and maximize flexibility, fragmentation protection will be provided at various levels, specific to body regions, based on wounding potential. BOP protection will be provided to the front of the thorax. Impact protection is provided to the head and spine. Heat and flame protection will be provided through the use of flame and heat resistant materials. The system is equipped with provisions that allow future communications.

Advanced Tactical Parachute System (ATPS)



Advanced Tactical Parachute System (ATPS)

Mission

Provide the airborne Soldier with a modernized tactical parachute system that includes a completely redesigned main and reserve parachute and an integrated harness system.

Description and Specifications

The **Advanced Tactical Parachute System (ATPS)** represents the next-generation personal parachute system and provides the airborne Soldier with the first wholesale modernization of the tactical parachute system since the early 1950s. Current efforts will be to evaluate commercial canopies to ensure a reduction in the rate of descent compared to the T-10.

Unlike the current reserve parachute system, the ATPS reserve features a center-pull deployment system. The reserve canopy is a derivative of the proven aeroconical design and includes apex scoop pockets at the top of the reserve canopy and skirt assist lines at the system's hem to promote fast opening of the reserve system during low speed malfunctions. The ATPS harness, due to higher placement of the D-rings for reserve attachment, is designed to displace the reserve canopy opening shock away from the jumper's lumbar region and spread this force equally along the long axis of a jumper's body.

Aircrew Clothing



Improved Aircrew
Battle Dress
Uniform (IABDU)



Flyer's Glove, Intermediate
Cold Weather (HAU-15P)



Aircrew Cold Weather Clothing
System (ACWCS)



Anti-Flash Hood



Aircrew/Combat Vehicle
Crewman Overalls

Mission

Enhance aircrew comfort and provide flash fire protection during flight, pre-flight, post-flight, refueling, and other aviation operations in a two-piece flight suit and a set of components/layers suitable for cold weather wear.

Description and Specifications

The **Improved Aircrew Battle Dress Uniform (IABDU)** is a two-piece camouflage flight uniform that is functional during normal operations and protects against flash fires. The design is similar to the Battle Dress Uniform (BDU) but includes an additional left sleeve pocket, lower-leg pockets, and slide fastener or hook-and-pile closures to meet aviator-specific needs. Color-compatible with ground Soldier uniforms, it provides the flexibility needed for field operations when arming and refueling helicopters and during escape and evasion situations. **IABDU** was modified to meet the needs of the Air Warrior program by adding shoulder and elbow patches, a chest area pass-through for the AW microclimate cooling vest air hose and a knife pocket on the inner left trouser leg. The ABDU/IABDU is made from a plain weave cloth in a blend of 92 percent Nomex, 5 percent Kevlar, and 3 percent static dissipative fiber. It is currently available in both woodland camouflage and a solid color, Tan 380. The ABDU is used with the **Aircrew Cold Weather Clothing System (ACWCS)** in colder climates. The multi-component ACWCS is a layered system that includes:

- Cold weather balaclava and anti-flash hood
- Flyer's glove and insulated glove
- Base insulating layer and cold weather liners

- Aircrew/combat vehicle crewman overalls
- ACWCS coat, liner, and detachable hood



Safety Restraint Tether (SRT)



Low Profile Flotation Collar (LPFC)

Mission

Enhance survivability of aircrew members conducting extended over-water flight operations, and provide retrieval capability for downed aircrew members.

Description and Specifications

The **Low Profile Flotation Collar (LPFC)** provides flotation for crew members and their survival equipment. When inflated, it prevents submersion of the face.

The **Safety Restraint Tether (SRT)** (compatible with Aircrew Integrated Recovery Survival Armor Vest and Equipment [AIRSAVE]) provides retrieval capability for downed aircrew members when used with the extraction harness of the AIRSAVE vest. SRT is a sewn, 48-inch nylon-webbing loop with break-strength greater than 3,000 pounds; it stores in an AIRSAVE pocket.

Army Combat Uniform



Mission

Enhance the Soldier's performance with a functional, ergonomic uniform tailorable to the mission.

Description and Specifications

The **Army Combat Uniform (ACU)** is the culmination of many months of research and development by Soldiers for Soldiers, and is the uniform of choice of the overwhelming majority of the Army's leaders and Soldiers. ACU is part of the Army's continuing effort to equip the Army's Current Force today with Future Force capabilities and to provide Soldier's with the best, state-of-the-art equipment.

The Army Combat Uniform (ACU) consists of a jacket, trousers, and patrol cap in a new universal camouflage pattern, sand-color moisture wicking T-shirt and improved hot weather and temperate weather Army combat boots. The ACU was constructed with direct and continuous involvement of Soldiers throughout the design and evaluation process. The result is a combat uniform with improved functionality and greater Soldier acceptance than the current Battle Dress Uniform (BDU).

ACU enhances Soldier performance because it is tailorable to the individual mission, provides enhanced functionality and ergonomics over the existing Battle Dress Uniform (BDU) and Desert Camouflage Uniform (DCU), and does away with requirements to procure uniforms focused on specific environments—the ACU is worldwide acceptable. ACU is also easy to maintain, thereby decreasing the out-of-pocket cost to the Soldier.

ACU fielding to deploying units began February 2005, and fielding to the entire Army is expected to be completed by December 2007.

Ballistic and Non-Ballistic Protection



Ballistic Face and Body Shields
and Ballistic Shin Guards



Civil Disturbance Protective Gear (Non-
Ballistic Face, Body, and Shin Guards)



Knee and Elbow Pads

Mission

Provide face, torso, and leg protection from a wide variety of threats during stability and support operations throughout the world.

Description and Specifications

Civil Disturbance Protective Gear provides face, torso, and leg protection from a wide variety of threats (debris, liquids, hand thrown objects, direct or indirect fire, etc.). Ballistic protection items meet the National Institute of Justice (NIJ) level IIIA requirements for 9mm and .44 magnum. **Ballistic Body Shield** is made of Spectra-Shield; **Shin Guards** are made from Kevlar KM2 and **Ballistic Face Shields** are made from acrylic and bullet-resistant polycarbonate materials. Non-ballistic items, face and body shields are made from transparent polycarbonate materials while non-ballistic shin guards are made from hard plastics.

Knee and Elbow Pads (KEP) provide dismounted Soldiers with protection for knees and elbows while engaged in tasks that subject these areas to possible injury or discomfort caused by impacts, pressure, or protruding objects and debris (e.g., rocks, gravel, glass, etc.).

Blast Protective Footwear System (BPFS)



Mission

Provide dismounted Soldiers who encounter increased threats of larger, higher velocity fragmentation anti-personnel mines with improved ballistic protection to the distal region (feet, ankles, lower calves, and upper thighs).

Description and Specifications

The **Blast Protective Footwear System (BPFS)** is a standoff device that may either supplement or replace the **Body Armor Set, Individual Countermine (BASIC)** overboots.

BASIC is designed to protect individuals during mine clearing operations. It consists of boots, trousers, and face shield, and is used in conjunction with the standard body armor and Kevlar helmet.

BPFS must protect the leg (hip, leg, ankle, and foot) against blast mines. It is an armored footwear system for use by Soldiers performing mine clearing tasks and expands the protection provided by the BASIC system overboot that was type classified in 2001. The notional capabilities of the BPFS include the following:

- Provides protection (reduced injury or no injury) superior to the BASIC overboot from blasts that are detonated directly under foot (notional threshold)
- Prevents injuries worse than sprains or bruises from blasts up to 100 grams of explosive charge (notional threshold)
- Prevents injuries (amputation below the knee) from blasts up to +175 grams of explosive charge (notional objective)
- Does not impair Soldier mobility during mine sweeping and probing operations (notional threshold)
- Does not interfere with the Soldier's operation of hand-held mine detectors, nor reduce the probability of detection (notional threshold)

Body Armor



Deltoid/Upper Arm



Axillary/Under Arm



Interceptor Body Armor (IBA)

Personnel Armor System
Ground Troops (PASGT)

Mission

Protect Soldiers and increase their survivability against bullet and fragmentation threats.

Description and Specifications

Each new generation of body armor is designed to offer increased protection and comfort to the Soldier over older versions, stopping or slowing bullets and fragments and reducing the number and severity of wounds. **Interceptor Body Armor (IBA)** is the latest version, and was designed to replace the Interim Small Arms Protective Overvest (ISAPO) and the Personnel Armor System Ground Troops (PASGT) vests.

IBA is modular, multiple-threat body armor composed of ergonomically designed front and back plates, and an outer tactical vest (OTV), compatible with Modular Lightweight Load-Carrying Equipment (MOLLE). The OTV protects against fragmentation and 9mm rounds. The small arms protective insert (SAPI) plates can withstand multiple small arms hits. Attachable throat and groin protectors provide increased protection, and webbing attachment loops on the front of the vest allow Soldiers to tailor loads to meet mission needs. The new, attachable **Deltoid Axillary Protector (DAP)** covers the shoulder/upper arm and armpit/underarm areas. DAP provides the same level of protection as the OTV and consists of two upper and under arm protectors.

Body Armor, Aircrew Integrated Recovery Survival Armor Vest and Equipment (AIRSAVE)



Mission

Provide Army, Navy, and Marine aircrew with aviation life support equipment in a single ensemble.

Description and Specifications

The **Aircrew Integrated Recovery Survival Armor Vest and Equipment (AIRSAVE)** is a three-component system consisting of a survival vest, soft body armor, and hard body armor plates. The survival vest is made of raschel knit, fire retardant-treated nylon and Nomex. The standard vest has 11 Nomex pockets. Two versions of a Survival Egress Air (SEA) MK 2.0 (for Helicopter Emergency Egress Device and Helicopter Aircrew Breathing Device) pocket, and a 9mm pistol (M-9) pocket are available as options. All pockets except the inner pockets are adjustable to allow for mission tailoring. The vest incorporates an adjustable nylon webbing cradle design extraction harness system and will accommodate the latest nuclear, biological, and chemical blower motor and mask.

The soft body armor is made of 36 plies of Kevlar in a Nomex casing, providing protection from anti-aircraft high-explosive incendiary ammunition fragments. The hard ceramic body armor plates with Nomex covers offer protection from .30-caliber armor-piercing ammunition. The hard plates are designed for quick removal in the event of a water crash/ditching situation. Aviators wear only the front plate while other aircrew personnel wear both the front and rear plates. The one-size survival vest is fabricated from raschel knit, fire retardant-treated nylon and Nomex plain weave cloth, ceramic, fiberglass plate, Kevlar spall protection, and a plastic slide fastener with double sliders.

The AIRSAVE system weighs 29 pounds:

Survival vest: 4 pounds

Soft-body armor: 9 pounds

Hard-body armor plates (two): 16 pounds

Body Armor, Concealable



Concealable Body Armor (CBA) System



Concealable, Stab-Protection Body Armor (CSPBA)

Mission

Provide 9mm handgun ballistic protection over the entire protected area and protection from ice picks and other sharpened metal objects fashioned as weapons.

Description and Specifications

The **Concealable Body Armor (CBA)** provides concealable, minimum-weight, ballistic protection that is comfortable to wear over extended periods of time. The CBA offers maximum concealable torso coverage for 9mm full metal jacket 124-grain bullet protection.

The **Concealable, Stab-Protection Body Armor (CSPBA)** is intended to be worn by Soldiers performing duties in correction, confinement, enemy prisoners of war/civilian internee, and law enforcement operations to protect them from homemade weapons and handguns. CSPBA will provide the individual Soldier with soft armor protection to the torso against a 9mm, full metal jacket 124-grain bullet, and meet the California Ice Pick standard to protect against other crude stab/slash weapons.

Boots – Cold (Wet and Dry) Weather



Intermediate Cold Wet Boot with
Removable Liner (ICWB w/RL)



Plastic Shell Ski Boot



Mountain Ski Boot



Extreme Cold Weather Boot



Extreme Cold Weather Boot

Mission

Provide environmental foot protection suitable for the spectrum of wet and dry cold weather conditions.

Description and Specifications

The white **Extreme Cold Weather Boot (ECWB)** protects feet in dry-cold conditions when temperatures are between -20 degrees Fahrenheit and -60 degrees Fahrenheit. Boots have six pairs of eyelets and insulation consisting of three layers of needle-punched polyester foam hermetically sealed within an outer and inner layer of rubber. The boot has a pressure release valve to adjust internal air pressure in the boot during high altitude operations.

The **Intermediate Cold Wet Boot with Removable Liner (ICWB w/RL)** is worn in cold, wet environments where the mean monthly temperature ranges between -10 degrees and 32 degrees Fahrenheit. The ICWB is a 10-inch high boot constructed of waterproof, breathable leather with a waterproof breathable membrane package and thermal insulation. It has a shock attenuating soling system with a rubber Vibram outsole and a molded cushion removable insole. It also incorporates a closed-loop speed lace system.

The **Mountain Ski Boot** is worn during mountain climbing or downhill/cross-country skiing in temperatures down to 10 degrees Fahrenheit. It has a high leather upper in a long vamp design with combination eyelets and hooks closure system. The boot is fully lined, except gusset, with tan, glove-type leather. The boot has a removable felt insole for bottom insulation.

The **Plastic Shell Ski Boot** is used as a walking boot, climbing boot, snowshoe boot, and cross-country/downhill ski boot as part of the Snow and Ice Traversing Equipment (SITE) system. It has a black polyurethane shell composed of separate foot box and flexible cuff units with a separate thermal liner.

Boots – Utility



Mission

Provide combat personnel with environmental and camouflage foot protection in a variety of battlespace environments.

Description and Specifications

The **Hot Weather Combat Boot–Type I (HWCB–Type I)** is a black, hot weather combat boot made with a moisture-resistant full grain leather and nylon duck upper with two drainage eyelets on the inner arch to assist in water removal. The sole of this boot consists of a three-layer, shock absorbing soling system with a solid rubber, abrasion resistant Vibram outsole. It has a combination eyelet and speedlace lacing system. A steel plate is incorporated into the insole for spike protection.

The **Infantry Combat Boot (ICB)–Type I** has been approved as the standard Army boot. It is a black-colored, temperate weather combat boot with a moisture-resistant full-grain leather and nylon duck upper. This boot contains a waterproof breathable membrane and integrated safety features for limited flame, conductive heat, and liquid fuel penetration protection. The sole of this boot consists of a three-layer, shock absorbing soling system with a solid rubber, abrasion-resistant Vibram outsole. It has a combination eyelet and speedlace lacing system.

The **Army Combat Boot (Temperate Weather) (ACB [TW])** is a tan-colored, temperate weather combat boot with a moisture-resistant rough side out leather and nylon duck upper. This boot contains a waterproof breathable membrane and integrated safety features for limited flame, conductive heat, and liquid fuel penetration protection. The sole of this boot consists of a three-layer, shock absorbing soling system with a solid rubber, abrasion-resistant Vibram outsole. It has a combination eyelet and speedlace lacing system.

The **Army Combat Boot (Hot Weather) (ACB [HW])** is a tan-colored, hot weather combat boot made with moisture-resistant rough-side-out leather and nylon duck upper with two drainage eyelets on the inner arch to assist in water removal. The sole of this boot consists of a three-layer, shock absorbing soling system with a solid rubber, abrasion-resistant Vibram outsole. It has a combination eyelet and speedlace lacing system.

The **Improved Boot Sock** is an over-the-calf style with a double welt top and a double covered elastic yarn that is continuous in every course, from the welt to the ankle area. The fully reciprocal heel, toe, and foot area is padded with a half-cushion terry for blister protection. The entire ankle, heel, toe, and foot is knit 360 degrees circumferentially with a main body yarn (terry yarn) and a silver-coated nylon yarn knit simultaneously in the same position. The nylon yarn is permanently coated with 99.9 percent pure silver, and is non-allergenic, anti-microbial, and provides protection against bacteria and fungi.

Camouflage Systems



Camouflage Face Paint (CFP)



Combined Camouflage Face Paint (CCFP)



Ghillie Suit Accessory Kit (GSAK)

Mission

Provide a variety of individual camouflage solutions for the Soldier in the visible and near-infrared regions of the electromagnetic spectrum; protection against thermal imagers, which operate in the mid- and far-infrared regions of the spectrum; and protection against insects.

Description and Specifications

Camouflage Face Paint (CFP) is used on all exposed skin to provide passive camouflage protection in the visible and near-infrared regions of the electromagnetic spectrum, but does not provide protection against thermal imagers, which operate in the mid- and far-infrared regions of the spectrum. The current camouflage compact is a cosmetic-like container with an acrylic mirror and compartments containing four colors.

The **Ghillie Suit Accessory Kit (GSAK)** provides surveillance units and snipers with various camouflage materials to construct, repair, and modify Ghillie Suits to meet unique mission and climatic requirements. The lightweight kit consists of 17 items. GSAK contains four colors of jute burlap strips, duck cloth, nylon cord, sewing needles, thread, foam padding, tie straps, face paint, over-white trousers, over-white mittens, over-white parka, netting, camouflage covers, trouser suspenders, and several other accessory items that complement natural colors, patterns, shadows, and textures to fabricate and maintain one Ghillie Suit.

Canteens



MOLLE Hydration System



Cold Weather Canteen System



Two-Quart Collapsible Canteen



One-Quart Canteen



Mission

Provide Soldiers with a portable means of hydration that interfaces with chemical/biological (CB) masks.

Description and Specifications

The **One-Quart Canteen** with cover is kidney-shaped and consists of a cover, body, strap, and cap that allows drinking from the canteen without removing the chemical-biological mask.

The **Two-Quart Collapsible Canteen** consists of a bladder, cover, carrying strap, and a cap that allows drinking without removing the chemical-biological mask. A pocket for water purification tablets is provided on the cover. The canteen may be carried slung over the shoulder using the carrying strap or attached to the field pack webbing using the belt clips.

The **Cold Weather Canteen System** will provide a means for Soldier hydration during operations in extreme cold environments (i.e., -40 degrees Fahrenheit). The system consists of a single wall, stainless steel, low profile, kidney-shaped canteen with a matching stainless steel cup with handle, and an insulated carrier. The canteen has a one-liter capacity and is constructed with a wide mouth opening to allow the penetration of a bayonet to break up any ice that forms during use in the extreme cold environment. The M-1 NBC cap The M-1 NBC cap interfaces with the drinking tube of the chemical protective mask using a cap adapter/mouthpiece of low thermal conductive material. The insulated carrier is designed to attach to the soldier's equipment belt or his load-carrying equipment.

The **MOLLE Hydration System** is an ergonomically designed water bladder that can be worn individually or integrated together with load-bearing equipment or web harness systems. Research and development is ongoing to interface the MOLLE hydration system with the CB mask. This is being addressed in the NBC Environmental Personal Hydration System (NEPHS) research and development program. It includes a drink tube with bite valve and positive shut-off and an exterior fill port with a handle for filling on the go. The outside pouch is made of abrasion-resistant 1000D Cordura™ nylon and has a sternum strap for added stability.

Chemical Protective Clothing and Gear



Battle Dress
Overgarment (BDO)

Suit,
Contamination
Avoidance,
Liquid
Protective
(SCALP)



Green or Black
Vinyl Overshoes
(GVO/BVO)



Chemical
Protective
Glove Set



Chemical Biological
Protective
Equipment Bag



Chemical
Protective
Helmet Cover



Chemical Protective
Undergarment
(CPU)



Firefighter's Integrated Suit-
Combat (FIS-C)

Mission

Protect Soldiers from chemical and biological contamination in battle and other operations.

Description and Specifications

The **Chemical Protective Undergarment (CPU)** is a two-piece “form-fitting” design to be worn under armor or aviation uniforms to provide protection from chemical agents. The CPU is snug-fitting and air permeable. In addition, the CPU is also worn by Department of the Army civilians with the Toxic Agent Ensemble, who are engaged in routine demilitarization of missiles and deploys surveillance of munitions that contain toxic agents. The **U.S. Army Firefighter’s Integrated Suit-Combat (FIS-C)** protects military firefighters in accordance with National Fire Protection Association (NFPA) standards and provides chemical and biological (CB) protection during firefighting. The FIS-C consists of proximity coat and trousers, gloves, helmet, standard firefighting boots, Nomex balaclava, self-contained breathing apparatus (SCBA) with chemical kit, Joint Service Lightweight Integrated Suit Technology (JSLIST) overgarment, CB gloves/liners, and carry bag.

Suit, Contamination Avoidance, Liquid Protective (SCALP) provides supplemental protection when worn over standard chemical protective garments. SCALP consists of a jacket, trousers, and two footwear covers worn over the chemical protective overgarment and overboots. All components provide protection from liquid contamination for up to one hour. The **Battle Dress Overgarment (BDO)** is the standard CB garment worn by Soldiers with the Chemical Protective Helmet Cover, Butyl Rubber Gloves, and **Green or Black Vinyl Overboots (GVO/BVO)**. BDO is a two layer, two-piece garment consisting of coat and trousers. The outer layer is water repellent; the inner liner is impregnated with activated charcoal. The BDO is obsolete effective December 2004 and the replacement item is the Joint Service Lightweight Integrated Suit Technology (JSLIST) overgarment.

The **CB Protective Equipment Bag** is designed to consolidate and transport the CB Protective Ensemble. It is made of an abrasion-resistant nylon and incorporates a unique closure system, using hook-and-loop closures, two compression straps, and quick release buckles for protection from the outside environment. Web loops have been stitched to the carrier to accept cargo tie-down straps for attachment to the current and developmental load carrying equipment.

The **Chemical Protective Helmet Cover** is a one-piece configuration made of butyl rubber-coated nylon cloth and gathered at the opening by elastic webbing enclosed in the hem. It provides any standard helmet with protection from chemical and biological contamination. The **Chemical Protective Glove Set** includes the impermeable butyl rubber gloves with cotton knit liners, which protect the hands in a chemical threat environment. The impermeable butyl gloves are manufactured in right and left hand, five-fingered configurations, and shaped to follow the natural curvature of the hand in a relaxed position, while the inner permeable cotton five-finger gloves are ambidextrous. GVO/BVO are worn over standard combat boots and provide chemical protection when needed and moisture protection during wet weather. GVO/BVO are made of an impermeable molded vinyl plastisol and have a slip-resistant outsole design. Elastic loops are pulled over three metal fasteners to close the gusset expansion after donning. The GVO/BVO provides 24 hours of protection against all known CB agents after maximum wear of 60 days.

Cold Weather Accessory Garments



Fur Ruffs



Extreme Cold Weather Mask



Balaclava Hood



Neck Gaiter



Arctic Camouflage Parka and Trousers

Mission

Provide Soldiers with full cold weather protection and camouflage for both cold-wet and cold-dry environments.

Description and Specifications

Cold Weather Accessory Garments include fur ruff parka hood, masks, neck gaiter, snow camouflage garments, and the cold/wet glove system.

Fur Ruffs attach to parkas to provide full head and face protection from the cold and high winds, forming a protective tunnel in front of the face. Hoods fit over caps and helmets, are lined with fur strips that can be formed into a tunnel held in shape by a soft malleable brass wire in the front hem of the hood, and button to the neck and collar of the parka.

The **Extreme Cold Weather Mask** protects the face against wind, cold, and blowing snow. The mask has an adjustable insulating face piece, and removable oro-nasal thermal control barrier and insulating bib-type throat covering. It covers the forehead, cheeks, nose, ears, chin, and mouth; the face piece and throat covering are white.

The **Neck Gaiter** can be worn six ways: as neck warmer, hood, balaclava, hat, ski band, or as a headband. The brown, one-size-fits-all Neck Gaiter is compatible with battle dress uniforms.

The Arctic Camouflage Parka and Trousers

(overwhites) provide camouflage in snow terrain. The thigh-length parka has a two-way, full front zipper closure with snap fasteners and a split bottom in back with an elastic draw cord to tie the parka bottom around each leg. They are not substitutes but are worn over other garments in extremely cold environments or for snow camouflage. The single-ply trouser has draw cords at the waist and leg bottoms with slash-through pocket openings on each hip.

Cold Weather Mittens



Cold Weather Trigger-Finger Mitten Shells



Extreme Cold Weather Mitten Set

Extreme Cold Weather (ECW) Mitten Set



Snow Camouflage White Mitten Shells

Mission

Provide hand protection for Soldiers in conditions too cold for leather gloves.

Description and Specifications

Cold Weather Trigger Finger Mitten Shells are worn with or without the **Cold Weather Trigger Finger Mitten Inserts** in temperatures too cold for leather gloves.

The Trigger Finger Mittens are a slip-on style made of fabric with a leather palm, thumb compartment, and a combined second, third, and fourth finger compartment. They have long gauntlets with elastic around the top, a tape loop at the top for attaching a suspension cord, and an adjustable closure strap on the back across the wrist. The backs of the hand and fingers are insulated. The green Cold Weather Trigger Finger Mitten Inserts are knitted fabric and have the same finger configuration as the Trigger Finger Shell. The hand, finger, and thumb are a plain stitch knit and the cuff is a rib knit.

The **Extreme Cold Weather (ECW) Mitten Set** is worn over other handwear to provide environmental protection in extreme cold climates. The ECW can be removed for short periods when Soldiers must perform tasks requiring dexterity in extreme cold climates. The mittens can be easily retained via the suspension harness, and then replaced to re-warm the hands. The set consists of an outer shell, a removable insulating liner, and a suspension harness. The outer shell is a fabric and leather palm with a layer of pile material on the back of the hand. The mittens have a long gauntlet with adjustable closure straps on the back of the outer shell across the wrist and top of gauntlet. The harness consists of a breast piece and a suspension piece. The outer shell of the mitten set is made of wind-resistant and water repellent cotton, nylon sateen with a deerskin leather palm, and wool pile material on the back of the hand. The removable insulating liner is made of polyester batting with a lightweight rip-stop nylon cover fabric. The suspension harness is made of cotton tape and cotton braid.

The **Snow Camouflage White Mitten Shells** are worn over ECW mittens and trigger finger mittens for camouflage in snowy terrain. The shell is made of a single layer of fabric and has a long gauntlet with an elastic take-up at the top of the gauntlet and an adjustable closure strap on the back across the wrist. The mitten shells are made of cotton warp/nylon filling oxford cloth that has a water-resistant finish.

Extreme Cold Weather Mitten Shell (Arctic Mitts) are a slip-on style made of fabric with a deerskin leather palm. The mittens have long gauntlets and an adjustable closure strap on the back across the wrist. The back of the hand and fingers are insulated and the back of the mitten has wool pile.

Combat Eye Protection



Oakley (Ballistic) Spectacle



Pyramex Venture II Spectacles



Arena Flakjak



Wiley-X SG-1 Spectacle



Wiley-X PT-1 SC



ESS Profile NVG Goggles



Body Specs Pistol Spectacles



UVEX XC



ESS Land Ops Goggles



Revision Military Eyewear



ESS ICE 2 Goggles



ESS Vehicle Ops Goggles



Ballistic Laser Protection System (BLPS)



Special Protective Eyewear, Cylindrical System (SPECS)



Sun, Wind, Dust Goggles (SWDG)

Mission

Provide laser and ballistic eye protection for Soldiers who do and do not require prescription corrective lenses, and general eye protection from sun, wind, and dust.

Description and Specifications

The **Ballistic Laser Protection System (BLPS)** provides ballistic and laser eye protection and consists of multiple spectacle assemblies available in clear, sunglass, and 2- and 3-wavelength laser protection. The BLPS laser protection is provided by dye absorber technology. The BLPS accommodates a prescription lens insert via a nosepiece carrier for Soldiers who require corrective lenses. All lenses are ballistic protective.

Five sets of eyewear protection have been issued in support of the Rapid Fielding Initiative (RFI) **Combat Eye Protection Program (CEPP)** to units being forward deployed. They are the **Eye Safety Systems (ESS) Land Ops Goggles, ESS Profile NVG, Wiley-X SG-1 Spectacle** (until stock is exhausted), **UVEX Spectacle**, and **Oakley SI-M Frame (Ballistic) Spectacle**.

Authorized ballistic commercial eyewear are **UVEX XC, Oakley SI-M Frame, Body Specs Pistol, Revision Military Eyewear, Wiley-X SG-1 and PT-1SC, ESS ICE 2 Goggles, ESS Land Ops, ESS Vehicle Ops, ESS Profile NVG, Arena Flakjak, Pyramex Venture II, and Ballistic Optical Armor (BOA)**.

Sun, Wind, and Dust Goggles (SWDG) are the standard military goggle for eye protection and have a foam pad that seals the goggle frame to the face. A snap fastener facilitates easier lens replacement. The lenses provide ballistic and 2- and 3-wavelength protection.

The **Special Protective Eyewear, Cylindrical System (SPECS)** provides ballistic and laser eye protection for Soldiers who do not require prescription corrective lenses. The SPECS system consists of a lens-carrying brow-bar, interchangeable spatula and cable temples, nosepiece, and four interchangeable lenses. The temples are capable of pantoscopic angle adjustment for maximum fit, comfort, and acceptance. Lenses provide 2- and 3-wavelength laser protection. All lenses are ballistic protective and are capable of defeating a 5.8-grain, T-37 shaped fragment-simulating projectile at 650 feet (198 meters) per second.

The **Military Combat Eye Protection (MCEP)** system program will enhance the Soldier's battlefield capabilities when wearing eye protection. MCEP will provide laser protection (maintaining ballistic protection) and ultimately protect against frequency-agile laser weapon systems operating in the optical region of the electromagnetic spectrum. It will provide light transmission that will enable the Soldier to wear the system both in daylight and at night during all missions including airborne operations. It will also provide one system that prescription and non-prescription wearers can wear (in a goggle and spectacle configuration). The goggles are ventilated and coated to maximize resistance to scratching and fog and provide limited ballistic and UV protection for Soldiers.

Combat Vehicle Crewman (CVC) Clothing



Combat Vehicle
Crewman (CVC) Coverall



CVC Coverall Liner



High Temperature Resistant
Cold Weather Jacket



Anti-Flash Hood

Mission

Provide combat vehicle crewmen with extraction capability and improved protection from flame and flash fires in all weather conditions.

Description and Specifications

The **Combat Vehicle Crewman (CVC) Coverall** is a one-piece design with a front entry, slider-fastener closure with dual sliders, a drop seat, upper back extraction strap, collar with front throat protection, full-length sleeves with a wrist slide fastener closure, and nine pockets. The coverall is made from a plain weave cloth in a blend of 92 percent Nomex, 5 percent Kevlar, and 3 percent static dissipative fiber. It is currently available in solid colors OG-106, CG-483 and Tan 380. A woodland camouflage print has been developed.

The **Anti-Flash Hood** is shoulder length, conforms to the head and flares into a yoke at the bottom. The circular face opening is edged with bias binding that covers elastic webbing. The top portion of the hood has two layers of the basic material, while the yoke is a single layer. It is a blend of 80 percent flame resistant Rayon and 20 percent polybenzimidazole (PBI) high performance fiber, in a natural color.

The **CVC Coverall Liner** is worn under the coverall to provide additional thermal insulation and protection from flash fires. They are a set of upper and lower garments that separate at the waist. The upper is a waist-length jacket configuration with sleeves. The lower trousers attach to the upper garment and are compatible with the drop seat of the coverall. The coverall can be worn with the both the upper and lower garments of the liner attached, or just the upper section alone. The liners are made from a quilted Aramid batting material.

The **High Temperature Resistant Cold Weather Jacket** protects from cold and flash fires. The jacket is single breasted with a front slide fastener closure and inside protective flap. The back has a yoke and a retrieval strap opening with a hook-and-pile closure. The left sleeve has a utility and pencil pocket and the sleeves have elbow patches. The cuffs and waistband are rib knit. The jacket is made from an oxford weave cloth in a blend of 92 percent Nomex, 5 percent Kevlar, and 3 percent static dissipative fiber, and is currently available in solid colors OG-106, CG-483 and Tan 380 and is fully lined with a quilted Aramid batting material.

Extended Cold Weather Clothing System (ECWCS)



Cold Weather
Coat and
Trousers Liners

Extended
Cold Weather
Clothing
System
(ECWCS)

Black Fleece
Bib and Jacket

Extended Cold Weather
Polypropylene Underwear

Silkweight Underwear

Lightweight Cold
Weather Underwear
System (LWCWUS)

Wool Winter Sock

Mission

Protect the Soldier from cold weather conditions with clothing adjustable to the Soldier's personal preference and metabolism and the prevailing weather conditions.

Description and Specifications

The **Extended Cold Weather Clothing System (ECWCS)** insulated layering system is designed to maintain adequate environmental protection in temperatures ranging between +40 degrees and -60 degrees Fahrenheit. The material in the parka and trousers includes a nylon lining, nylon inner and outer layer, and a knitted, plastic intermediate layer in a four-color camouflage print. The fleece shirt and trousers of the **Black Fleece Bib and Jacket** serve as an insulating layer. The insulating shirt has a full front opening with two-way zipper, wind-proof flap, pit zippers, and hand warmer pockets. The bib overalls are similar to the current style, but are less bulky; liners are 100 percent polyester fleece.

The **Lightweight Cold Weather Underwear System (LWCWUS)** provides Soldiers lighter weight underwear with wicking capability. The polypropylene underwear layer serves as a moisture-wicking layer worn next to the skin. LWCWUS is a brown, two-piece, 100-percent polyester long underwear set. The shirt has a zippered turtleneck collar, and drawers have an elastic waistband and standard front fly opening. The system provides environmental protection in temperatures from 0 degrees to 50 degrees Fahrenheit when worn with standard clothing items; it also wicks moisture to the outer garment layers.

The **Cold Weather Coat and Trouser Liner** is an insulating layer for cold weather clothing and the Extended Cold Weather Clothing System. Modifications to the standard coat liner allow Soldiers to wear it independently of their respective field clothing, as buttons and buttonholes have been added to the coat front. The liner is made of polyester batting and rip-stop quilted nylon.

The **Wool Winter Sock** is a knitted seamless sock worn with the ski mountain boot. The inside of the wool sock has terry tuft stitches throughout. It is made of merino wool and cotton in a natural color.

The **Fleece Cap** is a synthetic microfleece cap that is a bell-shaped, pull-on style cap. It will become a part of the FY06 clothing bag and is currently being fielded under the Rapid Fielding Initiative (RFI).

Extended Cold Weather Polypropylene Underwear

includes a turtleneck with a center front zipper that extends to the middle of the chest area and allows for ventilation at the neck and chest area. The drawers serve as a base layer to protect the lower extremities. The brown underwear is knitted, brushed multifilament polypropylene.

The **Black Fleece Bib and Jacket** consists of a black fleece shirt with full front opening and a two-way zipper, windproof flap, pit zippers, hand warmer pockets, and black fleece bib overalls that are similar to the current style, but less bulky. Together, the Black Fleece Bib and Jacket reduce the bulk of the original liners by 40 percent.

Silkweight Underwear is treated polyester knit to wick moisture away from the body. Undershirt has a crew neck, contoured longer tail in back and long sleeves with a thumb hole to aid in donning and add protection to hand/wrist area. Flat seam construction reduces chafing.

Helmets



Army Combat
Helmet (ACH)



Parachutists and
Ground Troops Helmet

Combat Vehicle
Crewman Helmet
(CVCH)

Mission

Provide ballistic protection to the head, temple, ear, and neck areas against fragmenting munitions without degradation to the Soldier's field of vision, stability, and hearing.

Description and Specifications

The modular **Advanced Combat Helmet (ACH)** comes in two shell sizes and two pad sizes. The modular pads of the suspension system offer improved stability and physical comfort. The edge of the ACH shell is finished with a rubber trim. The cotton/polyester chin strap, a four-point design, allows for quick adjustment for head size and includes a neck cushion for improved comfort and stability. The helmet shell is Aramid fabric in camouflage green 383. It weighs between 3 and 3.25 pounds, depending upon size, and the helmet cover is available in woodland or desert camouflage pattern.

The **Parachutists and Ground Troops Helmet** is a rigid (Aramid fabric with a phenolic/PVB resin), one-piece ballistic protective item. It has a small visor and contains a cradle suspension system. An improved helmet suspension assembly and headband were fielded several years ago. The headband utilizes hook-and-loop tape to adjust for head circumference and to attach the headband to the suspension assembly (metal hardware eliminated). A hook-and-pile pull-tab is used on the drawstring of the suspension assembly to adjust the height of the helmet. The chin strap is a two-point, open chin cup design. A camouflage cover in several patterns is available. The Suspension System (improved version) is a cradle-type webbing configuration that is attached to the helmet with six screws and A-nuts. This feature allows replacement while minimizing the amount of hardware inside the helmet.

Associated components include the camouflage helmet band, comfort pad, insulating cold weather helmet liner cap, and parachutist's helmet pad. Liners and pads provide energy absorption, rear impact protection for parachutists, cushioning, and comfort. Additionally, wearing pads improves the fit and the stability of the helmets.

The **Combat Vehicle Crewman Helmet (CVCH)** consists of a rigid, compression molded, outer shell constructed with 33 layers of Aramid Kevlar fabric coated with 15-18 percent of phenolic and polyvinyl butyral resins. The shell has a rubber edging adhesive along its peripheral contour, and is painted with a chemical agent-resistive coating. The liner is constructed with energy absorbing foam sections enclosed in a fire-resistant Nomex mesh fabric. The CVCH is attached to a fabric mesh inner liner by snap fasteners and hook-and-pile tape. Located on the front of the helmet are leather fastener mounts for attaching the shell to the chin strap.

Joint Service Lightweight Integrated Suit Technology (JSLIST)



Mission

Protect personnel from chemical and biological weapons and agents with a protective clothing ensemble that can be tailored to the diverse operational needs of the Soldier, Sailor, Airman, and Marine.

Description and Specifications

The **Joint Service Lightweight Integrated Suit Technology (JSLIST)** Overgarment is the first DOD-managed chemical/biological (CB) protection program and is led by the USMC. Soldiers will wear the overgarment in all environments when under imminent threat of a chemical attack and after initiation of chemical operations. The JSLIST Block 1 Glove Upgrade initiative satisfies an immediate need for a lightweight, tactile, fire resistant, chemical-protective glove with greater dexterity and comfort than the current butyl CB protective glove. In an attempt to encourage competition and lower costs, the JSLIST program solicited for JSLIST overgarments in alternate materials but with the same design as the original JSLIST. The purpose of the JSLIST Additional Source Qualification (JASQ) program is to qualify additional manufacturers to provide JSLIST overgarments.

The JSLIST overgarment is lighter and less bulky than previous chemical protective garments, more durable, and provides more protection against liquid and vapor chemical challenges. Trousers have bellows-type pockets, a high-waist, adjustable suspenders, and an adjustable waistband with a slide fastener front opening with protective flap and a bellows pocket with a flap located on each thigh and two hook-and-pile ankle adjustment tabs on the leg openings. The coat has an integral hood, a slide fastener front concealed by a flap with hook-and-pile closure, enclosed extendable elasticized drawcord hem with jacket retention cord, full-length sleeves with hook-and-pile wrist closure adjustment tabs, and an outside bellows pocket with flap on the left sleeve. The outer shell is woodland or desert camouflage, with a 50/50 nylon/cotton poplin rip-stop lining with a durable water repellent finish. The liner is a non-woven front laminated to activated

carbon spheres bonded to a tricot knit back. Glove candidates could be liners for wear under existing gloves, a CB glove, or a combination glove shell and separate liner. Candidates must be more durable. The JASQ must have the same characteristics as JSLIST.

Load Carriage-Related Equipment



Field Pack Cover



All-Purpose Lightweight Individual Carrying Equipment (ALICE)



Compression Sack



Duffel Bag



Mounted Crewman Compartmented Equipment Bag (MCCEB)



40mm Grenade Vest



Individual Tactical Load Bearing Vest



Equipment Belt Extender



Field Case



Mattock



E-Tool



Combat Patrol Pack



Large Field Pack



Medium Field Pack

Mission

Enable Soldiers to carry mission-essential equipment with minimal effect on mobility and survivability.

Description and Specifications

The **All-Purpose Lightweight Individual Carrying Equipment (ALICE)** - Fighting Load Belt and Suspenders have carriers for transporting basic loads of ammunition, fragmentation grenades, canteen, **Entrenching Tool (E-Tool)**, first aid items, compass, and bayonet knife. The **Compression Sack** compresses clothing and spare items and reduces bulk up to 50 percent. The **E-Tool** is used for digging in the field and is "D" handled, collapsible, and used as a shovel. The **Mattock** provides a more efficient digging tool than the E-Tool. The Mattock has a 12-inch steel head with mattock and axe blades, and a wooden 24-inch handle. It cuts tree roots and limbs, breaks rock, and loosens ground more easily. The **Equipment Belt Extender (EBE)** is a 4-inch equipment belt and has triple layers of 2.25-inch wide webbing with loops at each end for threading buckles. The **Field Case** holds a first aid kit or compass and is attached to the equipment belt or suspenders with a slide keeper.

The **Combat Patrol Pack** is Cordura nylon with nylon webbing, has a polyurethane-coated nylon spin drift collar with closure cord, cord lock, drainage and spin-drift grommets, and plastic hardware that is used during assaults on obstacles and targets that do not require sustainment loads.

The **Medium Field Pack** carries the existence load with or without a frame and has a main pouch, draw cord closure, and three outside pockets and hangers to carry equipment.

The **Large Field Pack** provides an efficient and comfortable method of transporting loads and has an internal frame and a low profile shape.

The **Field Pack Cover** is a layer of fabric with an elastic cord sewn in the hem; it fits over a large or medium field pack and is white, three-color desert camouflage, or four-color woodland camouflage. When removed, it can

be used as a combat patrol pack. Field pack straps and the pack frame help carry a field pack or are used to carry water cans, ammunition cases, and other equipment.

The **40mm Grenade Vest** is used by Soldiers armed with the M203 or M79 grenade launcher and has permanently-attached, open-ended pockets that accommodate 14 high-explosive and four pyrotechnic rounds. It is worn with the individual equipment belt over body armor.

The **Combat Medic Vest (CMV)** is designed to carry 40 percent of the medic's load and provides efficient organization of medical equipment.

The **Individual Tactical Load Bearing Vest** has permanently attached ammunition and grenade pockets and is compatible with the standard equipment belt.

Military Police and Law Enforcement Equipment



Mission

Facilitate law enforcement by Military Police with appropriate tools and equipment.

Description and Specifications

The **Military Police (MP) Law Enforcement Ensemble** includes an equipment belt, flashlight holder, chemical spray holder, baton holder, radio holder, handcuff case, dual magazine pouch, ambidextrous and removable flap holster, and belt keepers. Components are made of Cordura nylon and other heavy duty materials. The white nylon **Disposable Restraint System (DRS)** is a self-locking restraint band that encircles wrists or ankles and requires a cutting tool for removal.

The **Family of Batons and Nightsticks (FBN)** consists of two collapsible batons made from hard aluminum and polycarbonate materials, with grip handles: A straight baton with a side-handle for patrol use and an extended-length civil disturbance control baton. The latest material technology in batons and nightsticks, they provide Soldiers with an intermediate level of force, lessening the need to resort to deadly force.

The **Family of Restraint Systems (FORS)** comprises existing restraint systems as well as new or improved restraint devices to provide a standardized prisoner/detainee control capability for MPs, guard forces, or commander authority. FORS includes existing leg irons, the full body restraint system, and the new improved metal handcuff, the temporary cinch strap, and DRS.

The shoulder-carry **Mid-Size Riot Control Disperser, M37 (MRCD)** system includes a pressurized riot agent tank with a spray nozzle. This MP non-lethal, personal defensive system covers the gap between vehicle-mounted systems and dismounted Soldier systems, adding flexibility in conducting crowd control operations and protecting individual Soldiers. Additional uses include segregation of belligerents, hostage rescue, and capture of criminals and terrorists.

The **Law Enforcement (LE) and Special Reaction Team Bags** are Soldier Enhancement Programs (SEP). The LE is the smaller bag and is designed for everyday use in LE vehicles for carrying flashlights, batons, maps, flares, first aid kits, flex-cuffs, and other equipment. The larger Special Reaction Team/Civil Disturbance (SRT/CD) bag is designed to hold the special equipment used for civil disturbance operations (helmets, vests, gloves, batons, knee and elbow guards, and other equipment).

Both bags will be constructed of durable 1000 denier fabric (minimum) and be water resistant. Both will have carrying handles and a removable/adjustable shoulder strap. Both bags will have a fully accessible main compartment to provide a full view of the bag's contents. The LE bag will be 20 inches long by eight inches wide and 12 inches high, and have five exterior pockets (two of which will be open). This bag will have specialty exterior sleeves for flashlight, baton, and cuffs.

The SRT/CD bag is oversized at approximately 28 inches long x 10 inches wide and 14–20 inches high. The bag will have a closed side pocket (28 x 2–4 x 14–20 inches) that allows moisture to escape for storing tactical body armor that may have gotten wet after use.

The **Individual Riot Control Agent Disperser (IRCAD)** is a disperser that can deliver at least 15 one-second bursts of one of several approved riot control agents (RCAs), or a training device capable of replicating the characteristics of the IRCAD with an inert solution. The IRCAD will be used by individual MPs and by other Soldiers in dismounted tactical security operations, military operations in urban terrain (MOUT), LE, and SRT/CD operations in a wide variety of tactical environments when authorized by the commander and applicable law and treaties.

Search Mirrors (SM), readily available commercially, may be categorized as either individual pocket (tactical SM) or large living area viewing, security types (inspection SM). Optional features consist of telescopic extension, integrated illumination, multi-angle viewing, and wheels. Inspection SMs enable searches of vehicles or other modes of conveyance at checkpoints, gates, roadblocks, and dismount points, where missions dictate, and enable confinement facility personnel to search tight spaces. Tactical SMs enable Soldiers conducting MOUT to see around corners, into rooms, over/around obstacles without exposure to threats.

Modular Lightweight Load-Carrying Equipment (MOLLE)



Tactical Thigh Holster Extender (TTHE)

Modular Lightweight Load-Carrying Equipment (MOLLE)

Mission

Enable Soldiers to tailor individual loads to meet mission needs with modular, flexible, load-carrying equipment.

Description and Specifications

The **Modular Lightweight Load-Carrying Equipment (MOLLE)** system was designed and developed to replace the All-Purpose Lightweight Individual Carrying Equipment (ALICE) and Integrated Individual Fighting System (IIFS).

The MOLLE consists of a modular rucksack with removable compartments and components and a fighting load vest that can accept removable pockets for rifleman, pistol, squad automatic weapon (SAW), medic, and grenadier configurations. For short duration missions there is a small patrol pack and waist pack. The modularity allows individuals to tailor the load to meet mission needs.

The **Tactical Thigh Holster Extender (TTHE)** system is designed for the mounted or dismounted Soldier not to interfere with Load Bearing Equipment (LBE) or the Load Bearing Vest (LBV), belt, or the protective mask, to be attached to the LBE/LBV or the Battle Dress Uniform trouser belt to provide the ability to lower the holster to arms length while standing, as well as place the holster in a ready access position while seated. In addition, the Tactical Thigh Holster System will work with the Soldier Enhancement Program (SEP) initiative M9/M11 Pistol Mount Interface with or without the Integrated Laser White Light Pointer (ILWLP), also a SEP program.

Mountaineering Equipment



Mission

Enable Soldier mobility in ascending or descending mountainous terrain.

Description and Specifications

The **Snow Wire Anchor** provides security in steep ascents. The **Ice Axe** is used to dig through snow or ice. **Cam Action Ascenders** are rope-gripping devices that climbers use to pull themselves up along a rope. The **Figure-8 Descender** allows steep incline rappelling.

The **Piton Hammer** is used to drive all types of rock and ice pitons. The **Rock and Ice Hammer** is used to hammer pitons into cracks in rock and has an ice climbing pick. **Ice Pitons** provide security by screwing into ice formations. **Angle Pitons** are driven into rock cracks in steep ascents. The **Cliffhanger Piton** hooks onto rock edges and flakes. The **Flat General Pitons**, **Offset Knifeblade Pitons**, and **Mountain Pitons** are driven into rock. **Wired and Hexagon Stoppers** provide security during steep ascents by placing the stoppers into cracks in the rocks.

The **Full-Body Climbing Harness** gives the climber freedom of movement by attachment of the rope harness. The **Kernmantle Rope** secures climbers and equipment in steep ascents, descents, and bridging, and can be used to haul equipment.

Crampon Protectors are intended to cover the points of the crampons to protect climbers from injury and equipment from damage. **Crampon Straps** keep the crampon firmly affixed to the climber's footwear.

The **Mountain Rescue Pulley** is used for hauling equipment and for emergency rescue. The **Nonlocking Mountain Piton Snap Link** is D-shaped and used to clip running rope to various anchors or to fasten pieces of rope sling or hardware together quickly and securely. The **Locking Mountain Piton Snap Link** is used in rappelling and erecting fixed rope installations.

The **Special Operational Forces (SOF) Mountaineering Equipment Set (SOFME)** provides Special Operations Soldiers with equipment to maintain mobility in mountainous, glacial, and snow-packed terrain. SOFME consists of 39 items provided for 12-man SOF teams. The set contains general purpose rock hammers, ice axes, ascenders, three types of snap links, descenders, five types of pitons, eight sizes of stoppers, two sizes of irregular hexagon stoppers, cliff hangers, two sizes of piton ice screws, full body climbing harnesses, mountain rescue pulleys, crampons, two sizes of snow anchors, two sizes of tubular webbing, and five sizes of rope/accessory cord.

Parachute, MC1-B/C/E



Mission

Enable parachuting Soldiers to steer toward a specific impact point in the drop zone into winds up to 13 knots via a static line-deployed parachute usable by small teams during airborne operations and training.

Description and Specifications

The **MC1-B/C/E Parachute** is deployed using either a 15-foot or 20-foot static line allowing the parachutist to be delivered by either C-130 or C-17 U.S. Air Force aircraft. The MC1-B/C/E parachute is a parabolic shape with a H-TC shape configuration in the rear, with 60 square feet of canopy removed. This enables the canopy to turn 360 degrees in 7.7 seconds with a forward thrust of 8 knots (9.5 mph) or 14 feet per second. Depending upon air density and the jumper's total weight, the average rate of descent is 18 feet per second. Total suspended weight limitation is 360 pounds. The MC1-B/C/E parachute has:

- Nominal diameter of 35 feet
- Thirty suspension lines
- Two control lines
- Mesh anti-inversion net

The MC1-B/C/E parachute assembly consists of five components:

- Pack tray
- Troop harness
- Deployment bag
- Riser
- Canopy

The parachute has a combined service life of 16.5 years; service life is 12 years and shelf life is 4.5 years. The MC1-B/C/E parachute must be repacked every 120 days. It is made of nylon cloth, webbings, and cords commonly used in the manufacturing of parachutes.

Parachute, T-10C



Mission

Enable the safe delivery of the parachutist, weapon systems, and equipment to the drop zone into winds up to 13 knots.

Description and Specifications

The static line-deployed **T-10C Parachute** is used for combat mass assault airborne operations and training. Depending upon air density and the jumper's total weight, the average rate of descent for the parachute is 22 feet per second; total suspended weight limitation is 360 pounds. The parachute is deployed using either a 15- or 20-foot static line, allowing the parachutist to be delivered by either C-130 or C-17 U.S. Air Force aircraft.

The T-10 Parachute is a parabolic shape and has a nominal diameter of 35 feet, 30 suspension lines, and a mesh anti-inversion net.

The T-10 Parachute assembly consists of five components: pack tray, troop harness, deployment bag, riser, and canopy. The parachute has a combined service life of 16.5 years: service life is 12 years and shelf life is 4.5 years. The T-10C Parachute must be repacked every 120 days. The T-10C Parachute is made of nylon materials used in the manufacturing of parachutes.

Parachutist Equipment



Modified Improved Reserve Parachute System (MIRPS)



Universal Static Line (USL)



Harness Single Point Release (HSPR)



Parachutist Drop Bag (PDB)



Mission

Provide means to secure individual equipment to the parachutist during movement in the aircraft, during exit, and main parachute deployment; and provide the means to secure mission-essential equipment.

Description and Specifications

The **Harness, Single-Point Release (HSPR)** assembly is used to secure equipment to the parachutist and is made of nylon webbing with friction adapters, two adjustable leg straps, two D-ring attaching straps, and lowering line. The harness is secured around the equipment load and allows for a simultaneous release of the load and leg straps from the parachutist and parachute harness.

The **Modified Improved Reserve Parachute System (MIRPS)** includes a standard T-10C parachute canopy assembly integrated with a commercial deployment assistance device, composed of a bridle line, pilot parachute, and spring. The pack tray includes a line bag for stowing suspension lines, and an inner staging flap that holds the reserve parachute until sufficient tension is achieved through the bridle/pilot parachute assembly during deployment. The **MIRPS** tray is slightly larger than that of the T-10C so it accommodates a larger pilot chute, spring, and bridle. The pack tray has a yellow stripe along the inspection flap and is made of nylon textile materials used to make parachute systems.

The **Parachutist Drop Bag (PDB)** is a commercial, load-carriage item incorporating a single point release; it is used with seven or 15-foot lowering lines when conducting static line military free-fall parachuting operations. It has exterior pockets for easy access to maps and water and can be worn front- or rear-mounted. The retention strap consists of nylon webbing with an attachment eyelet in the center and hook and pile tape on each end of the strap.

The **Universal Static Line (USL)** is composed of a 15-foot static line, a 5-foot extension, and a snap hook. During C-17 operations, the extension is added to the 15-foot static line, thereby meeting the requirement for the 20-foot length. USL is made of water-repellent coated and textured tube-edge 6.6 nylon.

Personal/Optional Clothing and Equipment



Beret



Maternity Cardigan Sweater



White Cardigan Sweater

Women's/Men's Class A/B
Service Uniform

Overcoat (Men and Women)

Women's/Men's Dress Mess Uniform

Mission

Provide a variety of standard issue and new clothing, insignia, and personal equipment to enhance fit, comfort, alterability, and appearance.

Description and Specifications

Gold-Plated Anodized Insignia replaces the clothing bag yellow brass insignia. The **Beret** is the standard issue headgear, and the garrison cap worn with the Class A and B uniforms was eliminated. The **All-Weather Coat** functions as a raincoat and a topcoat. The **Maternity Cardigan Sweater** is an optional item worn with maternity service uniforms. The **Woman's Service Uniform** was redesigned, improving fit, comfort, alterability, and appearance. The **Women's Dress Mess Uniform** is an optional dress uniform for formal, social events. The **Men's Green Class A Service Uniform** consists of a coat, trouser, shirt, necktie, belt and buckle. The **Class B Service Uniform** omits the coat and tie if the short sleeve shirt is worn.

In March 2003, the Chief of Staff, Army (CSA) approved an optional purchase overcoat for wear by Soldiers who want more warmth and a dressier appearance than what is provided by the **All Weather Coat**. Anodized gold-plated accoutrements do not require polishing; currently, they are optional purchase items. The beret is a one-piece, unlined wool shell with leather headband, draw cord, and lined badge-stay for attachment of insignia. The standard beret is black; airborne Soldiers wear maroon berets, Special Forces wear green, and Rangers wear tan berets. All-weather coats are double-breasted with a six-button front, set-in sleeves, pointed, button-down shoulder and sleeve straps, a front gun patch flap, two vertical welt pockets with pass-through slits, belt, center back pleat vent and half cape back, in black poly/cotton blend. The maternity sweater is a V-neck cardigan, longer in front than in back with elbow and shoulder patches, epaulets with hook-and-loop attachments, and a six-button front.

Poromeric Oxfords are plain-toed with removable cushioned insoles, skid resistant soles, and breathable

comfort lining. The **Women's Class A Uniform** consists of slacks, skirt, coat, shirt, neck tab, belt, and buckle. The **Class B Uniform** omits the coat or coat and neck tab, depending upon the shirt worn. The **Women's Dress Mess Uniform** has a waist-length jacket with ornamented sleeve, long or short skirt, and formal white blouse with ruffled front and dome-shaped buttons.

The **Cardigan Sweater, White (Optional)**, is a V-neck cardigan design with a rib knit trim around the front opening and neckline and rib knit cuffs, two lower front pockets, and a six button front.

Sleeping and Shelter Systems Equipment



Modular Sleeping Bag System (MSBS)



Shelter Half Tent



Self-Inflating Sleeping Mat



Sleeping Mat

Mission

Provide combat personnel with modular-concept sleep equipment that allows for environmental and physical comfort in a variety of situations.

Description and Specifications

The **Modular Sleeping Bag System (MSBS)** is a bag-within-a-bag concept. MSBS consists of a camouflaged, water resistant, breathable bivy cover, lightweight patrol and intermediate cold weather sleeping bags, and a compression sack to store and carry the system. When the patrol and intermediate bags are mated together, the combined system provides extreme cold weather protection in temperatures ranging above -30 degrees Fahrenheit. Used individually, the lightweight patrol bag provides protection between 35 and 50 degrees Fahrenheit. The bivouac cover can be used in any configuration (warm, intermediate, or extreme cold weather). Sleeping bags are made of rip-stop nylon and filament polyester insulation; camouflage covers are breathable, coated nylon; the Compression Sack is water-resistant durable nylon. The system is augmented by use of insulated layers of the **Extended Cold Weather Clothing System (ECWCS)**.

The **Sleeping Mat** is a camouflage green, closed cell polyethylene foam pad with two tying straps permanently attached to secure the mat when in a rolled configuration and is used with the MSBS by placing it under the system, providing insulation from the cold ground and improving comfort.

The **Self-Inflating Sleeping Mat** is used the same manner as the sleeping mat, but the self-inflating mat has an open cell foam core sandwiched between and laminated to an air impermeable, coated nylon fabric, with a plastic valve in one corner. It inflates by unrolling it and opening the air valve at one corner of the mat, allowing air to enter the mat.

The **Shelter Half Tent** is cotton/rayon duck and provides shelter in temperate or hot environments. When joined to another shelter half, it forms a shelter for two men. Snaps are provided along the lower edge of the shelter half to permit six halves to be joined together to make a six-man tent. The pinnacle of the tent is formed with two wood poles; sides are secured to the ground with pins placed through the footsteps.

The **Improved Combat Shelter (ICS)** is a versatile, lightweight, freestanding shelter for the Infantry Soldier that will replace the current Shelter Half. It provides protection from rain, wind, and snow in all terrains. It is easy to assemble/disassemble and designed for carry in the rucksack or attachment to the equipment belt. The ICS configuration has recently been type classified. The ICS consists of a basic shelter component with floor, tent sides/overhead, insect screening and poles and pins; a tent fly for wet weather protection; and a carry bag.

Snow/Ice Mobility Equipment



Mission

Enhance Soldier movement in snow or ice-covered terrain.

Description and Specifications

The **Alpine and Cross Country Ski Bindings** consist of a toe wire, heel clamp, binding retainer and sole plate, which is hinged at the toe. Engaging the binding from this retainer allows the heel to lift for cross-country skiing. The binding has a bilateral release mechanism. They fasten skis to boots for downhill and cross-country skiing. Gaiters cover the area where boots meet trousers and provide additional protection from snow and the elements.

The **Aluminum Shaft Adjustable Ski Poles** are used by Soldiers on snow-covered terrain and consist of an adjustable aluminum shaft with plastic hand grips, snow rings, and nylon wrist straps.

Trail Snowshoes enable improved movement over snow-covered terrain. The snowshoe consists of a magnesium frame laced with nylon coated steel cable with a binding made of a pad/claw with nylon webbing, and metal hooks and buckle for attaching the snowshoe to the boot.

The ski equipment **Repair Kit** comes in a nylon case and contains screwdrivers, scraper, file, pliers, hand drill, emergency ski tip, 1/8-pound steel wool; ski pole handgrip assembly, expansion plugs, basket assembly, and structural adhesive kit; spool of wire, abrasive cloth, filament reinforced tape, polyethylene repair candles, and climbing skin adhesive.

Hinged Crampons prevent slipping when walking on ice or ascending steep ice faces. They are made of chromium molybdenum steel and are black or gold with an epoxy coating. They have 12 spikes and an adjustable center hinge to adjust the length of the crampon. They are fully adjustable in width to be compatible with the standard military vapor-barrier boots, the standard ski/mountain boot, and commercial plastic-shell mountaineering boots, with the aid of a big foot centerpiece when necessary. The crampons have six attachment points for two-inch wide binding straps and are furnished with all the tools necessary to assemble and adjust them.

The **Military All-Terrain Skis** have grooves for attaching mohair climbers and are made of fiberglass with a foam or wood core, with steel edges, polyurethane tip and tail protectors, and polyethylene bases.

Toxicological Ensembles



Self-Contained Toxic Environment Protective Outfit (STEPO)



Improved Toxicological Agent
Protective Ensemble (ITAP)

Mission

Protect personnel working in highly toxic, oxygen-deficient, or unknown environments that are immediately dangerous to life and health.

Description and Specifications

A critical need exists for improving the M3 Toxicological Agents Protective (TAP) suit that has been the military standard for Army Level 1-A protection for 40 years. The **Improved Toxicological Agent Protective (ITAP)** ensemble will provide protection during peacetime and wartime for short-term operations. ITAP will be deployed in “immediately dangerous to life and health” (IDLH) toxic chemical environments (up to 1 hour) emergency lifesaving response, incident response, routine chemical activity operations and initial entry monitoring. The **Self-Contained Toxic Environment Protective Outfit (STEPO)** is a totally encapsulating system that provides protection for personnel working in highly toxic, oxygen-deficient, or unknown environments that are IDLH. STEPO will replace the M3 Toxicological Agents Protective (TAP) ensemble in highly toxic areas (OSHA Level-A environments), while the ITAP ensemble will still be used for routine chemical activity operations in non-IDLH environments. Individuals must be capable of working in toxic environments during peace and wartime conditions. In environments that exceed IDLH standards, individuals must have an alternate life support system for short-term entry and lifesaving. STEPO is composed of five layers of Nomex and Teflon; the integral hood is made of three layers of Nomex and Teflon. STEPO provides the wearer with clean, closed circuit breathing air rather than the filtered air provided in the TAP ensemble. It provides four hours of percutaneous protection against chemical/biological agents, toxic industrial chemicals, unknown chemicals, rocket fuels, and petroleum, oil, and lubricants. It also provides respiratory protection and cooling and is compatible with user radios. The gloves are neoprene/butyl.

Urban Utility Equipment (Grappling Hook and Micro-Rappel System)



Micro-Rappel System (MRS)



Grappling Hook, Collapsible (GHC)

Tactical Assault Ladder System (TALS)

Mission

Enable entry or escape from potentially volatile situations and a means to gain entry or exit from second or higher floors with lightweight, portable, and reusable devices.

Description and Specifications

The **Grappling Hook, Collapsible (GHC)** can support loads of 1,800 pounds or more without bending and can be folded, collapsed, or retracted into a more compact shape (cube) between 60–100 cubic inches. It allows Soldiers to hand loft the item (with attached climbing rope) over obstructions or through building apertures. It can be secured to a structure by extended tines, thereby aiding in ascending or descending objects or buildings. The GHC is compatible with standard Soldier equipment and clothing. GHC can be carried in a rucksack, backpack, or Modular Lightweight Load-Carrying Equipment cargo pocket.

The **Micro Rappel System (MRS)** augments existing rappel ropes, provides an option for rappel activities, and is used when weight or bulk problems prevent use of the standard military rope system. It is made of aluminum or tempered steel in anodized black or other subdued finish. The three adopted variants range between 1.4 to 1.6 pounds each. MRS is 5mm thick and weighs 1.6 pounds per 100 feet (.73 kg per 30.5m) compared to the current static rope, which is 1/2 inch (12.7mm) and weighs 7.2 pounds per 100 feet (3.2kg per 30.5m). The MRS consists of a rappel harness, descender, carabiner, deployment bag, and 82 feet of 5mm rope. It weighs less than 2.75 pounds. Tensile strength exceeds 3000 pounds, which equals a safety factor of 10 for a 95th percentile Soldier with equipment. With leg straps stowed, the MRS harness can be used as a belt. The system permits safe and efficient descent from rooftops, windows, or steep terrain. MRS is Cordura nylon and Technora, with metal alloys in black.

The **Tactical Assault Ladder System (TALS)** is a man-portable, adjustable height system capable of being assembled, emplaced, and used in three minutes or less. TALS weighs approximately 40 pounds. TALS is subdued in color and will not interfere with movement techniques or weapons emplacement while being carried or climbed.

Utility Gloves



Intermediate Cold Wet Glove (ICWG)



Men's and Women's Anticontact Gloves



Cold Weather Glove Inserts



Men's and Women's Heavy Duty Gloves



Barbed Wire Handler's Gloves

Mission

Protect Soldiers' hands in a variety of situations, settings, and temperatures.

Description and Specifications

The waterproof **Intermediate Cold Wet Glove (ICWG)** protects hands in conditions of approximately 0 to 40 degrees Fahrenheit. Worn alone or over lightweight inserts, the March 2005 redesign eliminates the flexor design and lists performance characteristics to allow for the U.S. to supply many waterproof/breathable membranes.

Barbed Wire Handler's Gloves offer protection when handling barbed tape or wire and similar materials. A four-finger-and-thumb Clute design with a five-inch gauntlet, their split leather cowhide palms are lined with cotton flannel; the gauntlet areas with cotton duck. The palm and the palm side of the fingers and thumb are reinforced with leather strips stapled 1/4 inch apart.

Men's and Women's Anticontact Gloves are worn in cold climates to protect against cold burns caused by touching cold metal objects and when performing tasks requiring good dexterity. They are an unlined Gunn-cut design made of fabric with a leather palm.

Men's and Women's Heavy Duty Gloves are Gunn-cut of cowhide or horsehide and intended for heavy work, with an adjustable strap and buckle on the back. The gloves have a continuous thumb inseamed all around, with a leather welt inserted in the thumb seam. The seam at the base of the fingers incorporates a reinforcing leather welt, turned up to cover the stitching. An additional layer of leather reinforces the palm. The ambidextrous **Cold Weather Glove Inserts** are knitted fabric designed to be worn under other gloves to provide extra protection from cold.

The **Combat Glove** is used in field operations to protect Soldiers' hands while navigating in rough terrain and moving objects. The Combat Glove consists of 96 percent Kevlar® and 4 percent P140 conductive anti-flash fiber. Snug and form fitting, it is reinforced in exactly the areas most needed for combat operations—including fast roping and rappelling—without interfering with dexterity or tactility. The back and fingers of the glove increase cut and flame protection with a unique blend knit. The leather surrounding the knuckles, fingers, and palm is classified under MIL-DTL-81188C. The finger lining is made of 100 percent Nomex®; thread materials

consist of 100 percent Kevlar classified under MIL-A-A-55195. The cuff consists of cloth lining and an elastic wristband. The cloth portion of the glove is inherently fire resistant Kevlar that does not melt or drip, and can be laundered without losing its fire retardant properties.

The **Light Duty Work Glove/Utility Glove** is multifunctional but is normally worn for performing light work and is a bag item. The glove uses a flexor design which improves durability through fewer seams in the finger portion and incorporates a three-dimensional shape with less bulk.

Fuel Handlers Glove (FHG) will protect against kerosene-based fuels (JP-8). FHG will consist of Nomex knit with leather palms, will be liquid-proof and flame resistant to provide fuel handlers' with protection, performance, and compatibility and maximize protection and comfort. It will be green, and have a full Gore-Tex® direct grip glove insert for waterproofing.

Protective Ensemble consists of three components: riot control glove, cut protective glove, and forearm guard. This glove ensemble has excellent dexterity and tactility and will be used by the Military Police in pat-down situations and will provide Soldiers with cut and puncture protection.

Utility Uniforms and Accessories



Neckerchief, Brown



Cap, Woodland Camo, Temperate Battle Dress Uniforms (BDU)



Enhanced Hot Weather BDU Cap



Cold Weather Coat



T-Shirt and Riggers Belt



Hot Weather Hat



Insect Net



Improved Mechanics Coveralls (IMC)



Desert Combat Uniform



Temperate BDU



Enhanced Hot Weather BDU



Poromeric Cook's Shoes



Brown Bath Towel

Mission

Improve Soldier comfort with climate-appropriate utility uniforms and accessories that function as combat clothing or duty uniforms.

Description and Specifications

Primary utility uniforms include **Desert, Enhanced Hot Weather, and Temperate Battle Dress Uniforms (BDU)**, insect repellent-impregnated BDUs, and associated headgear. Additional accessories worn with these uniforms include the combat cap with neckerchief, drawers, undershirts, and socks. These uniforms function as combat clothing in desert, tropical, and temperate climates and field environments. When authorized, they are also worn as duty uniforms in garrison environments.

The **Cold Weather Coat (Field Jacket)** may be worn with all utility uniforms as an outer garment. The BDU coat is a bush-type design with breast and lower pockets with flaps and reinforced elbow patches. The trousers have four standard-type pockets, two leg pockets with flaps, and reinforcement patches at the knees and buttocks. The uniform is loose fitting, allowing body ventilation. Materials are water repellent and treated cotton/nylon, static-dissipating fiber ripstop poplin weave. Uniforms come in desert and woodland camouflage patterns. Headgear is constructed using the same materials and in the same patterns. The **Combat Cap and Neckerchief** are used in field and garrison environments with the temperate and hot weather BDUs. It is similar in design to the BDU cap, but the retractable ear flaps are flannel lined. The neckerchief is knitted cotton jersey cloth that provides protection against the sun and functions as a sweat cloth.

The Cold Weather Coat is lined, hip-length, with a bi-swing back, convertible stand-up collar with adjustable tab closure, horizontal slide fastener closure on the collar, an attached hood with draw cord adjustment, two piece set-in sleeves, adjustment tab cuff closure, shoulder loops with button closure, slide fastener fly-front closure with snap fasteners, two bellows-type breast pockets and two lower inside hanging pockets with snap fastener flap closures, waist and hem draw cords, and inside buttons for attaching the insulating liner. The coat is a cotton and nylon blend, wind resistant sateen fabric. It is available in the same patterns as the BDU. **Drawers** have sloped elasticized leg openings and an elastic waistband; the undershirt has

quarter length sleeves with a crewneck; both are brown cotton. The black or green wool sock is worn with all boots.

The **Poromeric Cook's Shoes** are water and slip-resistant, and comfortable for extended wear. They were adopted after a market search and evaluation of commercial, off-the-shelf footwear for use in garrison dining facilities.

The **Improved Mechanics Coveralls (IMC)** are lighter and more comfortable than old mechanic's coveralls, with hook-and-pile sleeve and leg closures, reinforced knees, elbows, seat, underarm ventilation, and added pockets. The V-neck, long-sleeved, pullover sweater has a convertible collar and a five-button neck front, and acts as a warm undergarment.

The **Insect Hat and Insect Net** are worn in tropical and semitropical areas when helmets are not worn. The hat has a soft crown and stitched brim, chin strap, and camouflage band. The net attaches to the hat by an elastic cord with two loops at the bottom to fasten buttons.

The **Brown Bath Towel** is 20 x 40 inches and is issued to Soldiers in the clothing bag for use in garrison and field environments.

Wet Weather Outer Garments



Improved Rainsuit (IRS)



Wet Weather (WW) Parka and Trousers (WWPT)



Poncho Wet Weather Camouflage

Mission

Enhance Soldier comfort and effectiveness with individual wet weather outer garments that include adjustable features to meet changing environments and activities.

Description and Specifications

The **Improved Rainsuit (IRS)** parka and trousers are made with a waterproof, moisture-vapor-permeable, polyurethane back-side-coated nylon material with a durable water repellent finish, in woodland camouflage print, for improved comfort and appearance. The design is less bulky and better fitting than the **Wet Weather (WW) Parka and Trousers (WWPT)**. The IRS parka will accept the standard, button-in field jacket liner when additional insulation is required. It has underarm ventilation slide fasteners, front insignia tab, and adjustable toggle closures at the hood and bottom hem. The IRS trousers have slide-fastener adjustable closure bottom leg hems, for easier donning and doffing without removal of boots. IRS replaces the WWPT.

The WW Parka is a mid-length, raglan sleeve constructed garment that consists of an attached hood, full zipper front. The material is a lightweight, double-coated (face and back), waterproof, non-breathable coated material. It has a hook-and-pile closure on each sleeve cuff at the juncture of the front of the hood and the body of the parka, slash-through pocket openings, a draw cord in the hood's opening, and an elastic draw cord at the bottom. The WW Trouser consists of an ankle-length trouser with a drawcord in each leg hem, slash-through pocket openings, suspender loops, waist-to-crotch fly front with no zipper, and a waist drawcord.

The lightweight **WW Poncho** is used by Soldiers as a waterproof, rain protective garment, ground sheet, foxhole cover, sleeping bag with the poncho liner, and can be joined with another poncho to form a temporary tent. The wet weather poncho is rectangular, with an attached hood that has a drawcord around the face opening. Male and female snap fasteners are down each side so that the front and back of the poncho can be joined together to form a temporary tent.



PROGRAM EXECUTIVE OFFICE SOLDIER

Project Manager Soldier Warrior

Product Manager
Air Warrior

Product Manager
Land Warrior

Product Manager
Mounted Warrior

Project Manager Soldier Equipment

Product Manager
Sensors and Lasers

Product Manager
Clothing and Individual Equipment

Project Manager Soldier Weapons

Product Manager
Crew Served Weapons

Product Manager
Individual Weapons



PROJECT MANAGER SOLDIER WEAPONS

Project Manager Soldier Weapons (PM SW) supports Soldiers through the development, production, and procurement of future and current weapon systems, ammunition, and associated target acquisition/fire control products. Soldiers are equipped with the best products industry has to offer, resulting in decisive overmatch capability through increased lethality and range, as well as decreased weight. Two Product Managers under PM SW drive the mission: Product Manager Individual Weapons and Product Manager Crew Served Weapons.

In addition to weapons and ammunition, PM SW manages development and procurement of suppressors, weapons accessory kits, optics, tripods, mounts, and binoculars.



Product Manager Crew Served Weapons



Product Manager Crew Served Weapons (PM CSW) manages light to heavy machine guns, grenade launchers, sniper systems, research and development of small arms ammunition, and related fire control/acquisition products. PM CSW is responsible for the development of all future crew served weapon systems. These future weapons will increase lethality and enhance reliability.



Ammunition Research, Development, Testing, and Evaluation



XM102 Reloadable Fuze for M84



Day/Night Trainer



XM1037 Short Range
Training Round for M249



XM1041/XM1042
Close Combat Mission
Capability Kit



XM1022



Lightweight Ammunition



Airburst Ammunition

Mission

Manage the research, development, testing, and evaluation of ammunition products for use in small arms weapon systems.

Description and Specifications

XM1037 Short Range Training Round for M249:

This ammunition for 5.56mm weapon systems has a maximum range of 250 meters and an effective training range of 25 meters. Used with M4, M16, and M249 series weapons with no weapon modification.

XM1041/XM1042/XM1072 Close Combat Mission

Capability Kit: This commercially available training ammo contains a soft and frangible projectile filled with a colored dye. It allows realistic force-on-force training.

XM1068 12 Gauge Extended Range Non-Lethal

Cartridge: The XM1068 Cartridge is an NDI SEP program which will Type Classify a new 12 gauge Non Lethal (NL) cartridge with extended range capabilities. This cartridge will supplement the current suite of NL munitions with a capability ranging from 5-30 meters.

Light Weight Ammunition: The light weight ammunition program will reduce weight of the 7.62mm ammunition by a minimum of 20 percent. Weight savings will be obtained by utilizing new technologies to fabricate the cartridge case in lieu of the standard brass cartridge case. Technologies to be explored include alternative composite materials.

Airburst Ammunition: The airburst ammunition program will design a proximity type fuze applicable to 25mm and 40mm munitions. The proximity fuze technology will be applied to obtain increased suppression, door breaching, and NL capabilities.

Enhanced .50 Caliber Machine Gun (E-50)



Mission

Provide increased lethality and survivability on the battlefield over the standard M2 Heavy Barrel Machine Gun by modifying it to make it easier and safer to employ.

Description and Specifications

The **Enhanced .50 Caliber Machine Gun (E-50)** will improve all current and future U.S. Forces' ability to dominate their adversaries in combat. The E-50 will enable warfighters and their units to be more effective by means of faster target engagement due to reduced time in changing the barrel. The system will be maintained and supported similar to the current M2HB machine gun.

The current M2HB machine gun requires the operator to set the headspace and timing with a go/no-go gauge each time a barrel is installed. Improper adjustment of headspace and timing can cause malfunctions, parts damage, or injury. The lack of a Quick Change Barrel (QCB) exposes the Soldier to enemy fire for extended periods of time, with adverse impact on his survivability and mission accomplishment. The ability, therefore, to change barrels quickly and resume firing without resetting the headspace and timing is critical. E-50 will provide an attachable handle to change the barrel without the need for gloves. E-50 will also include a closed bolt system with a manual trigger block safety (not currently on the existing M2HB machine gun) and the ability to quickly change the barrel without resetting headspace and timing each time.

Additional modifications to the M2HB include:

- Flash suppressor to reduce signature to make it night-vision friendly
- Common barrel thread to interchange with existing M2HBs
- Patented three-slot barrel retention system to assure secure barrel locking and alignment
- Picatinny mounting rail for optics

These capabilities will insure that the commander has constant firepower and less downtime.

M101 Common Remotely Operated Weapon Station (CROWS) and CROWS–Lightning



Mission

Enable vehicle mounting and remote operation of a variety of machine guns via a common mounting station.

Description and Specifications

M101 Common Remotely Operated Weapon Station (CROWS) is a vehicle-mounted weapon station that enables under-armor/remote operation of the MK19 Grenade Machine Gun, M2 .50 Caliber Machine Gun, M240B Medium Machine Gun, M249 Squad Automatic Weapon, and XM307 Advanced Crew Served Weapon. It also increases engagement range, first-round-hit probability, and operational response time.

CROWS-Lightning is also a vehicle-mounted weapon station that enables under-armor/remote operation. CROWS-Lightning uses the M240B Medium Machine Gun, the M249 Squad Automatic Weapon, and XM307 Advanced Crew Served Weapon. Based on the CROWS concept, CROWS-Lightning provides performance characteristics similar to CROWS, increased engagement range, increased first-round-hit probability, and increased operational response time on a variety of vehicles incapable of mounting the MK19 Grenade Machine Gun or the M2 .50 Caliber Machine Gun due to vehicular weight limitations.

The CROWS-Lightning program is being executed in conjunction with the Rapid Equipping Force.

M107 Semi-Automatic Long Range Sniper Rifle (LRSR)



M107 Semi-Automatic Long Range Sniper Rifle (LRSR)**Mission**

Enable sniper teams to employ greater destructive force against light materiel and personnel targets at longer ranges and at a higher rate of fire.

Description and Specifications

The **M107 Semi-Automatic Long Range Sniper Rifle (LRSR)** is a commercial off-the-shelf (COTS) anti-materiel and counter-sniper semi-automatic .50 caliber rifle. Based on the Marine Corps M82A3 Special Application Scoped Rifle, it greatly exceeds the terminal effect capability of the M24 (7.62mm, bolt-action) Sniper Weapon System. The intent is to complete missions that cannot be accomplished with current sniper rifles. It supplements a sniper role by supporting combat operations to discriminatingly and precisely engage high-value targets and provide a counter-sniper capability, especially in military operations in urban terrain engagements, with greater firepower and standoff ranges to improve sniper survivability.

The rifle is a reliable, semi-automatic, direct-line-of-sight weapon system, capable of delivering precise rapid fire on targets out to 2000 meters. Major components include: rifle with detachable 10-round box magazine, variable-power day optic sight, hard carrying case for storage and transportation and protection, soft case for tactical operations, bipod, detachable sling, extra magazines, cleaning/maintenance equipment and manuals. Maximum overall length is 57 inches. Weight with components attached is no more than 35 pounds. The M107 fires standard .50 caliber ammunition with the MK211, .50 caliber, multipurpose cartridge designated as the primary tactical round.

M145 Machine Gun Optics



Mission

Enable better target detection, identification, and improved hit probability with a telescopic sight for the M240B Medium Machine Gun and M249 Squad Automatic Weapon in the light machine gun role.

Description and Specifications

M145 Machine Gun Optics (with anti-reflective device) provide machine gunners with the capability to detect, identify and engage targets at extended ranges. The three to four power magnification and wide field of view make this product configurable to mission profiles, operational modes and environmental conditions. Part of the Rapid Fielding Initiative for 2005, the M145 fits on the M240B for Infantry, Armor Cavalry, Special Forces, and Combat Engineer Units. In a light machine gun role, it fits on the M249.

M192 Lightweight Ground Mount for Machine Guns



M192 Lightweight Ground Mount for Machine Guns

Mission

Reduce Soldier combat load with a lightweight and compact machine gun mount/tripod.

Description and Specifications

The **M192 Lightweight Ground Mount for Machine Guns** is a compact and collapsible ground mount for light and medium machine guns, complete with an integrated traverse and elevation mechanism. It weighs 11.5 pounds and improves mobility.

M2 .50 Caliber Machine Gun



Mission

Improve Soldier effectiveness and lethality via a versatile, automatic weapon for use on the ground or mounted on a vehicle.

Description and Specifications

The **M2 .50 Caliber Machine Gun** is automatic, belt-fed, recoil-operated, and air-cooled. It mounts on the M3 tripod and on most vehicles, and serves as an anti-personnel and anti-aircraft weapon. It is highly effective against light armored vehicles, low- and slow-flying aircraft, and small boats. The M2 provides automatic weapon suppressive fire for offensive and defensive purposes. It is capable of single-shot (ground M2) and automatic fire.

M24 Sniper Accessory Kit



- Wind Meter
- Improved Cleaning Kit
- Polarized Filter
- Improved Bipod
- Buttstock Cheek Pack

- Marksman Data Book
- Weapon Drag Bag
- Ammo Pouch
- Ballistic Calculator

Mission

Improve overall sniper performance for M24 sniper rifle teams with ancillary equipment.

Description and Specifications

The **M24 Sniper Accessory Kit** includes a wind meter, improved cleaning kit, polarized filter, improved adjustable bipod, shooter's stock pack, marksman data book, weapon drag bag, ammo pouch, and analog ballistic calculator.

M24 Sniper Weapon System (SWS)



Mission

Enable sniper teams to engage enemy forces (personnel) with a 7.62mm bolt action rifle using precision fire at extended ranges.

Description and Specifications

The **M24 Sniper Weapon System (SWS)** is a 7.62mm bolt-action, six shot, repeating rifle, chambered for the 308 WIN M118 special ball ammunition. Components include a day optic sight with 10 power magnification and adjustable focus, metallic iron sights, deployment kit, cleaning kit (rifle and optic), soft rifle carrying case, optic and system cases, operator's manual and an optional bipod. Associated support items of equipment include a Sniper Night Sight and an improved spotting scope. The SWS is a non-developmental item. The combat weight with sling, day optic, and full magazine is 14.25 pounds, 17 pounds with bipod and tools. Maximum effective range is 800 meters, and the length is 40.75 inches.

M240B 7.62mm Medium Machine Gun



Mission

Provide significantly improved reliability and more lethal medium support fire for ground units such as infantry, armor, field artillery, and combat engineers.

Description and Specifications

The **M240B 7.62mm Series Machine Gun** is configured for ground applications with buttstock, bipod, iron sights, and forward rail assemblies. It currently demonstrates 41,667 mean rounds between stoppage (1800 required) and 83,000 mean rounds between operational mission failure (15,000 required).

M240B Combat Ammo Pack



Mission

Enable the direct attachment of a lightweight ammunition magazine/container to the M240B Medium Machine Gun.

Description and Specifications

The **M240B Combat Ammo Pack** holds 50-100 rounds of linked 7.62mm ammunition and protects the linked belt from dirt and debris. It allows better movement of the M240B during initial insertions and engagements.

M240B Weight Reduction Program



Mission

Reduce Soldier combat load by reducing the weight of the M240B without compromising reliability.

Description and Specifications

The **M240B Weight Reduction Program** is intended to reduce the weight of the existing M240B by four pounds (minimum) to seven pounds (objective).

This program will evaluate high-performance lightweight materials and alternate manufacturing methods in fabricating major M240B components. These improvements will reduce the Soldier's combat load while allowing easier handling and movement of the weapon.

M240H 7.62mm Machine Gun (Aviation Version)



M240H 7.62mm Machine Gun (Aviation Version)**Mission**

Improve the self-protection capabilities of Black Hawk and Chinook helicopter crews by replacing the aging M60D Machine Gun.

Description and Specifications

The **M240H 7.62mm Machine Gun (Aviation Version)** is designed for aviation applications and demonstrates reliability equal to the M240B. It delivers two minutes of continuous suppressive fire and is removable/employable in a ground role.

M249 200-Round Soft Pack



Mission

Provide a durable, reusable M249 Pack similar to the combat proven 100-round hard pack.

Description and Specifications

The **M249 200-Round Soft Pack** Program is a follow-on effort to the soft packs provided under the Rapid Fielding Initiative (RFI). Based on requests from the field, RFI fielded a 200-round soft pack for the M249 designed to improve weapon retention and reduce the noise signature associated with the standard plastic ammunition container. The program will evaluate all potential candidates and select the best 200-round soft pack that meets program requirements.

M249 Squad Automatic Weapon (SAW)



Mission

Fill automatic rifle role in infantry squads and provide light machine gun capabilities in combat service/combat service support units.

Description and Specifications

The **M249 Squad Automatic Weapon (SAW)** serves as automatic rifle and light machine gun to infantry squads. The M249 weighs 22 pounds with 200 rounds of ammunition. It replaced the M16A1 Automatic Rifle at the squad level and some M60 several-purpose machine guns in non-infantry units.

M249 Squad Automatic Weapon (SAW) Collapsible Buttstock



M249 Squad Automatic Weapon (SAW) Collapsible Buttstock

Mission

Provide the Soldier using the M249 Squad Automatic Weapon with a more secure weapon/shoulder interface in both extended and collapsed positions.

Description and Specifications

The **M249 Squad Automatic Weapon (SAW) Collapsible Buttstock** will allow the weapon to be fired from the shoulder in the extended and collapsed positions, unlike the current product. It maintains a vertical buttstock position for full interface with the operator's shoulder at all times and provides intermediate, locking firing positions. Weapon control improves when fired in confined spaces such as military operations in urban terrain and air assault operations. Additionally, the buttstock allows ease of ingress/egress from Stryker Brigade Combat Team (SBCT) vehicles and reduces storage space requirements in SBCTs.

M249 Squad Automatic Weapon (SAW) Improved Bipod



M249 Squad Automatic Weapon (SAW) Improved Bipod

Mission

Enhance bipods for the M249 SAW to improve durability.

Description and Specifications

The **M249 Squad Automatic Weapon (SAW) Improved Bipod** leverages the design of the existing bipod and incorporates several features that improve the performance of the M249 weapon. The configuration of the bipod has changed, providing a rugged design that is more durable than the previous version. The result is increased reliability and weapon accuracy. Additionally, the length of the bipod legs can be adjusted to different heights, providing improved stability on uneven terrain.

M25 Stabilized Binoculars



Mission

Enhance surveillance and battle damage assessment with high-powered, stabilized binoculars.

Description and Specifications

M25 Stabilized Binoculars have 14-power optics that will allow Soldiers to identify targets and assess battle damage at extended ranges while providing increased on-the-move sighting capability. They are direct view optical devices (in the day mode). The M25 is stabilized by a precision miniature gyroscope mounted on a gimbal platform in the middle of the optical pathway. The platform holds the prisms; if they are held steady, the image remains steady regardless of the movement of the objective and eyepiece lenses. It is powered by two AA batteries that provide at least eight hours of use. The precision optics in the M25 enable extremely high resolution that roughly equates to the user being able to see a golf ball a mile away.

MK19 Grenade Machine Gun



Mission

Support the Soldier in offensive and defensive roles via a tripod- or vehicle-mounted grenade machine gun capable of engaging personnel and light armor targets out to 1500 meters and providing suppressive fire to 2000 meters.

Description and Specifications

The **MK19 Grenade Machine Gun** supports the Soldier in offensive and defensive roles by delivering a heavy volume of close, accurate, and continuous firepower against enemy personnel and lightly armored vehicles. The MK19 can be mounted on a tripod or on multiple vehicle platforms and is the primary suppressive weapon for combat support and combat service support units. The weapon can be used to protect motor movements, assembly areas, and supply trains in bivouac. In addition, it can defend against hovering rotary-wing aircraft, destroy lightly armored vehicles, fire on suspected enemy positions, and provide high volumes of fire into an engagement area and indirect fires from defilade positions. The MK19 increases the capability of U.S. forces to defeat opposing armored, mechanized, and infantry forces with high explosive dual-purpose (HEDP) ammunition. Effective (sight) range is 1500 meters. Maximum range is more than 2000 meters, with a firing rate of 350 rounds per minute.

MK19 Tactical Engagement System (TES)



Mission

Enable realistic combat training exercises without using live ammunition.

Description and Specifications

The **MK19 Simulation Player Unit (SPU)** system consists of a Laser Module, Operator Module, Audio Cue Device (ACD), and Trigger Assembly. The Laser Module emits visible flash cues and an invisible (infrared) laser beam toward a target. A blue LED Laser Firing Indicator located on the rear of the Laser Module provides the gunner with a visible indication that the laser has fired. A target is outfitted with a detector assembly that senses the laser beam from the Laser Module to cause a target KILL or NEAR MISS.

The Operator Module provides the individual with the means to display ammo type, ammo remaining, and the selected range. The Ammo Select allows the operator to change the ammo type. The Reload Belt resets the ammo loaded count to the maximum for the type selected. (Approximate reload time is one minute.) The Operator Module allows review of events (scrolls through the last series of actions taken). Additional messages that may show up include low battery warning, weapon destroyed, and BIT failure.

The Trigger Assembly senses the MK-19 firing trigger and signals the Laser Module and Operator Module to fire the laser. The ACD provides realistic sound effects.

Separate support equipment includes a Controller Gun (CG), used by the controller of the training exercise. The MK-19 SPU system kit includes alignment targets for performing bore sight verification, and an interface bracket to mount the ACD on a tripod or pintle mount.

XM110 7.62mm Semi-Automatic Sniper System (SASS)



XM110 7.62mm Semi-Automatic Sniper System (SASS)

Mission

Supplements the sniper's role to support combat operations with greater firepower and greater possible standoff ranges to improve sniper survivability.

Description and Specifications

The **XM110 7.62mm Semi-Automatic Sniper System (SASS)** is effective against personnel and light materiel targets. Capable of rapid fire/rapid reload, this suppressed sniper rifle exceeds rate-of-fire and lethality of M24 SWS. SASS is lighter than the M24 and its anti-personnel ranges are equal to or greater than M24. SASS includes enhanced sniper spotting scope

XM307 25mm Advanced Crew Served Weapon (ACSW)



Mission

Provide vehicle and weapon squads with decisive overmatch capability with high explosive air burst and armor-piercing ammunition.

Description and Specifications

The **XM307 25mm Advanced Crew Served Weapon (ACSW)** can replace selected MK19 Grenade Machine Guns and M2 Heavy Machine Guns with the next-generation crew served weapon system to dramatically increase lethality, range, and capability. The XM307 will combine the lethality of a 25mm airbursting munition, a 25mm armor-piercing (AP) munition, and an integrated, full solution, target acquisition and fire control system. The results will be decisively violent and suppressive target effects that provide a leap ahead in crew served weapons performance. The Target Acquisition and Fire Control System will incorporate a laser rangefinder, ballistic computer, direct view optics, video sight, electronic compass, thermal capability, and motion tracker.

The XM307 high explosive air burst (HEAB) munition will be capable of defeating not only exposed targets, but also those in defilade (targets that have taken cover behind structures, terrain features, and/or vehicles) at ranges to 2000 meters. The XM307's AP munition will be capable of defeating lightly armored materiel targets at ranges to 2000 meters. The weapon's recoil mitigation system allows the gun and tripod to realize great weight savings. Because it is 100 pounds lighter than other crew served weapons, the XM307 (with ammunition) can be easily dismounted from a vehicle and carried into a ground operation by its two-man crew.

XM312 Lightweight .50 Caliber Machine Gun



Mission

Provide vehicle and weapon squads with a very lightweight .50 caliber weapon system that is easily dismounted from vehicles for ground mount applications.

Description and Specifications

The **XM312 Lightweight .50 Caliber Machine Gun** is capable of firing all of the current .50 caliber ammunitions in the inventory. This includes, but is not limited to, the standard M33 ball round, the M8 armor piercing incendiary (API), the M903 sabot light armor penetrator (SLAP), and the MK211 multipurpose round that penetrates, fragments, and starts fires.

The .50 caliber XM312 weapon is derived from the 25mm XM307 Advanced Crew Served Weapon. An XM312 weapon can be created by replacing only four parts in the XM307 weapon. The commonality of these two weapons greatly enhances supportability. First, training is simplified since the principles of operation and the repair procedures will be very similar, reducing operator and maintenance training in scope. Second, spare and repair parts will be significantly reduced in type, quantity on-hand, and manufacturing cost. Safety will be improved through the elimination of the requirement for the operator to adjust headspace and timing. Also, familiarity with one system rather than two separate systems further increases safety.

The XM312 weapon can replace most of the currently fielded M2 .50 Caliber Machine Guns. By replacing the 75-year-old M2 Machine Gun, the Army achieves significant reductions in weight and recoil force. The XM312 weighs approximately one-third the weight of the M2 and imparts only one-quarter of the recoil. This lighter weight permits easy dismount and ground transportability when necessary, and the reduced recoil will lead to greater lethality through increased first burst accuracy.



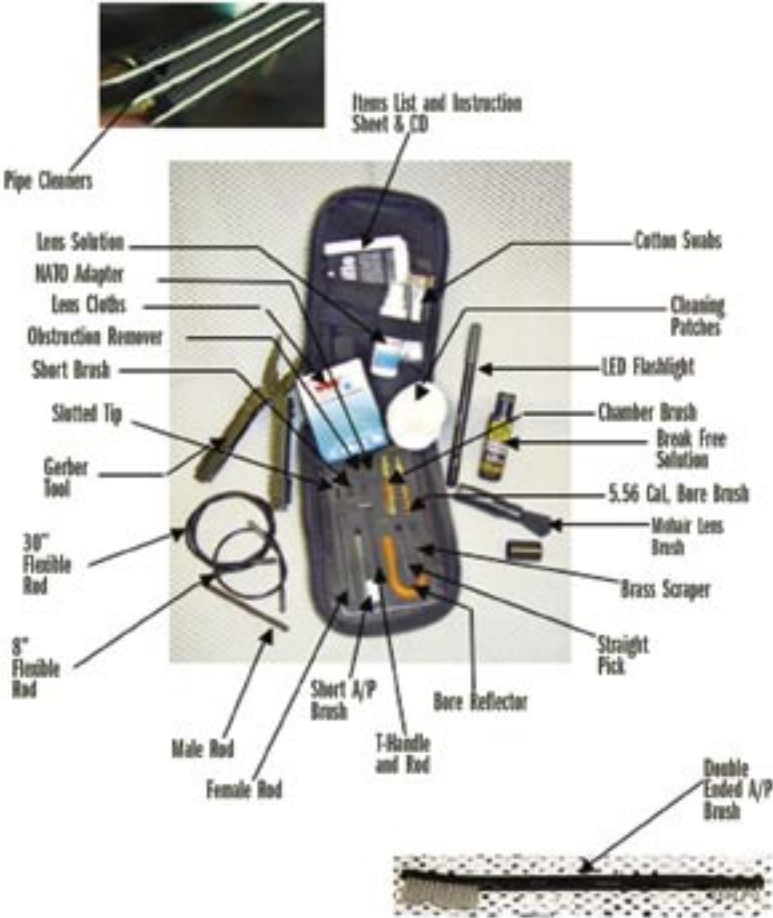
Product Manager Individual Weapons



Product Manager Individual Weapons (PM IW) manages and is responsible for research and development of rifles, carbines, pistols, shotguns, grenade launchers, small arms ammunition, and related target acquisition/fire control products. These future weapons will increase lethality and enhance reliability.



Close Quarters Battle Kit (CQB Kit)



Mission

Increase Soldier lethality and survivability.

Description and Specifications

The **Close Quarters Battle Kit (CQB Kit)** will provide several low cost, commercial off-the-shelf accessories for the M4 Carbine and M16 Rifle. These items were identified by Soldiers during Operation Enduring Freedom, the Joint Readiness Training Center Muddy Boots Council, after action reports, and the Rapid Fielding Initiative.

The CQB Kit will include:

- Weapon bipod
- Improved weapon cleaning kit
- Multi-magazine holder and pouch
- Accessory mounting rail for non-modular weapon system equipped rifles and carbines
- Tactical weapon sling



Mission

Improve personal/self-defense capabilities for the Soldier.

Description and Specifications

The **Future Handgun System (FHS)** will replace the M9 Pistol as the Army's personal defense weapon. FHS will provide enhanced terminal effects, improved sights, and an integrated mounting rail for attachment of enhanced targeting devices.

M16A4 Rifle



Mission

Increase the lethality and operational flexibility of the Soldier via improvements to the M16A2, the major infantry combat weapon throughout the U.S. Armed Forces.

Description and Specifications

The fourth generation M16, the **M16A4 Rifle**, features a performance identical to the M16A2. The M16A4 is a flat-topped M16A2 that incorporates a MIL-STD 1913 rail on top of the weapon's upper receiver. This weapon, when combined with the M5 adapter rail system, is the basis for the M16 version of the Modular Weapon System (MWS).

Physical differences between the M16A2 and M16A4 include a removable carrying handle with an integral rail-mounting system on the M16A4. When the carrying handle is removed, any accessory device with a rail grabber, such as an optical sight, can be mounted on the weapon.

The M16A4 Rifle barrel is designed to accept the M203 Grenade Launcher, which can easily be assembled to the rifle, offering the user both point and area firing capabilities.

Specifications:

Caliber	5.56 x 45mm NATO
Weight without magazine	7.5 pounds
Empty 30 round magazine	0.25 pounds
Loaded 30 round magazine	1.0 pound
Overall length	39.6 inches
Barrel length	20 inches
Muzzle velocity	3110 feet per second
Effective range	600 meters
Front sight	Adjustable front
Rear sight	Target sight adjustable

Sight radius

for windage and elevation to 600 meters

Cyclic rate of fire

19.75 inches

700-950 rounds per minute

Fire control selection

Safe - Semi - Full Auto

Upper receiver

Flat Top With Detachable Carrying Handle

M16 Rifle Mod Line



Mission

Increase the lethality and operational flexibility of the M16 Rifle, which serves as the major infantry combat weapon throughout the U.S. Armed Forces.

Description and Specifications

The **M16 Mod Line** procures a modular weapons suite of accessories, including the **M5 adapter rail system**, **backup iron sight**, **M68 Close Combat Optic (CCO)**, **grenade launcher rail** system and other accessories for the M16A4. The **M68 CCO (Red Dot Reflex Sight)** is a unity power reflex collimator sight for M16A2 and M16A4 Rifles as well as the M4 and M4A1 Carbines. The **M68 Sight** allows the Soldier to engage targets with both eyes open while maintaining situational awareness of events happening in close proximity. It eliminates the difficulty of aligning the iron sights. CCO will provide an operational capability under all mission scenarios and environmental conditions.

M4 Carbine



Mission

Enhance lethality and operational flexibility by enabling the Soldier to configure the M4 weapon to the mission.

Description and Specifications

The **M4 Carbine** replaces the M3 submachine gun, select M9 pistols, and M16A2 rifles for unit leaders, crew served gunners, vehicle crews, radio operators, light infantry, airborne/air assault, combat engineers, and others. It provides improved firepower compared to the M3 submachine gun and M9 pistol and allows mounting of the latest generation of fire control accessories without tools. One pound lighter than the M16, it provides improved portability compared to the M16A2.

M4 Carbine Mod Line



Mission

Enhance lethality and operational flexibility by permitting the Soldier to configure the M4 weapon to the mission.

Description and Specifications

The **M4 Mod Line** procures a **Modular Weapons Suite (MWS)** of accessories including: **M4 adapter rails**, **M68 Reflex Sight**, **Backup Iron Sight**, and other items for the M4 and M4A1 carbines. These rails and accessories are designed to increase lethality and operational flexibility. The accessory product mix varies from year to year depending on available funding and Soldier needs.

M9 Pistol, M9/M11 Pistol Rail



Mission

Enhance lethality, survivability and situational awareness in close combat situations via an improved pistol with rail attachment capabilities.

Description and Specifications

A semi-automatic, double-action pistol, the **M9** is more lethal, lighter, and safer than its predecessors. The M9 is carried by crew served weapon crewmen and by others who have a personal defense requirement, such as law enforcement personnel, unit leaders, and aviators. It replaces the M1911A1 .45 caliber pistol and the .38 caliber revolver.

The **M9/M11 Pistol Rail System** will enable the attachment of a laser or white light pointer to the M9/M11 Pistol, resulting in an increase in lethality and survivability of the Special Forces Soldier or Military Police by providing a tactical advantage in close combat operations. The Rail System enhances situational awareness, enabling the Special Forces Soldier or Military Police to identify or designate targets prior to engaging, and to rapidly engage multiple targets.

Magnified Combat Optic (MCO)



Mission

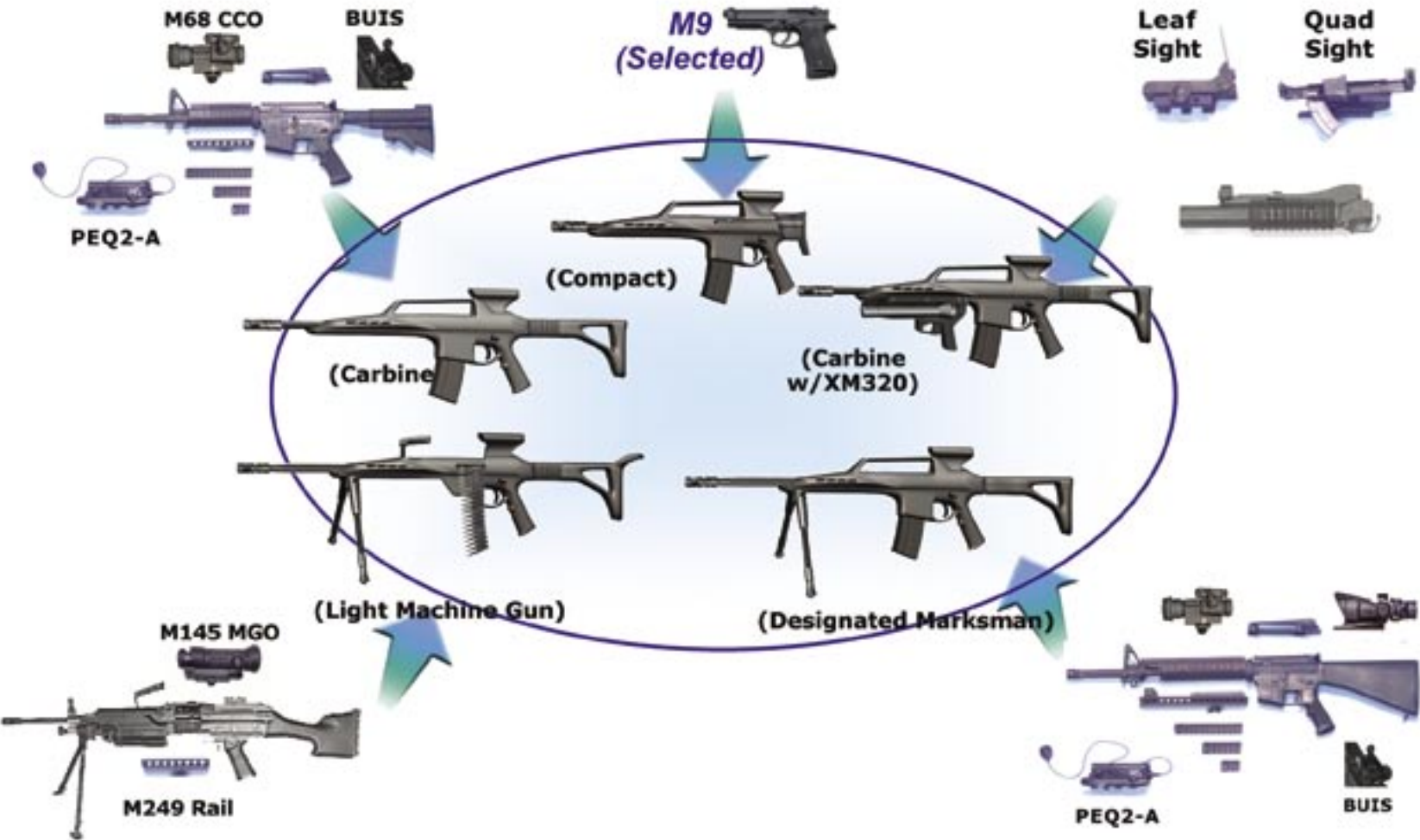
Provide the Soldier with first round hit capability at distances from 300 to 800 meters with current 5.56mm weapon systems.

Description and Specifications

The **Magnified Combat Optic (MCO)** will improve the capability to identify and engage targets from 300 to 600 meters range in the M4 Carbine and M16 Rifle, and at distances out to 800 meters in the M249 Squad Automatic Weapon. The system will allow the Soldier to transition rapidly between long range and close quarters engagements without degrading the ability to conduct reflexive fire techniques.

The optic can be used to scan an area. When a target is acquired, a ranging reticle within the optic can be used to obtain an accurate range to the target. An appropriate aiming point on the reticle can then be selected to accurately engage the target.

Objective Individual Combat Weapon System Increment I (OICW Increment I)



Mission

Enhance Soldier lethality and effectiveness, and reduce combat loads via a modular, mission-tailorable assault weapon family that fires NATO-standard 5.56mm ammunition and is lighter than current infantry weapon systems.

Description and Specifications

The **OICW Increment I** is a family of multi-configurable infantry weapons based on a single weapon platform using standard NATO 5.56mm ammunition. The family consists of four variants:

- Carbine
- Special Compact (SC)
- Designated Marksman (DM)
- Light Machine Gun (LMG)

The basic OICW Increment I platform can be reconfigured to any of these variants to meet mission needs.

OICW Increment I improves lethality, has an improved sighting system, and increases reliability, while providing the tactical commander with dramatically increased flexibility. The family of weapons will facilitate reduced training time, increase focus of operationally realistic training, and provide a reduction in mission preparation time due to a common configuration.

OICW Increment I increases the deployability and agility of all U.S. Forces. The family maximizes the commonality of parts and shares the same logistics and supportability resources. It supports the goals of the Future Force through a reduction in weight over the current M4 Modular Weapon System.

Objective Individual Combat Weapon System Increment II (OICW Increment II), XM25



Mission

Provide the infantry Soldier with a decisive overmatch capability in a weapon system that will dramatically increase lethality, range, and capability through the use of family of airbursting ammunition.

Description and Specifications

The **XM25** is the airbursting weapon subsystem of the XM29 Integrated Airburst Weapon System. It fires 25mm high explosive airbursting (HEAB) munitions. The XM25 incorporates a target acquisition/fire control that integrates thermal, powered direct-view optics, laser rangefinder, compass, fuze setter, ballistic processor, and internal display. The XM25 has a 300-meter range point target and 500-meter range area target capable of defeating defilade (hidden) targets. Spiral development of the XM29 will accelerate fielding of the XM25 subsystem in advance of the dual barrel system. Development of the XM25 will maximize commonality of parts and share the same logistics and supportability resources of the XM29.

Small Arms Family of Suppressors (SAFoS)



Mission

Enable Soldiers to reduce the firing signature of their small caliber weapons, minimizing detection during engagements.

Description and Specifications

Small Arms Family of Suppressors (SAFoS)

program will provide suppressors for the M9 pistol, M4 carbine, and M16 rifle that will attach to the muzzle without the use of tools. SAFoS will reduce firing signature by reducing the muzzle flash, smoke, noise, and dust normally generated by firing the weapon.

XM26 12 Gauge Modular Accessory Shotgun System (MASS)



XM26 12 Gauge Modular Accessory Shotgun System (MASS)

Mission

Enhance Soldier effectiveness with lethal, non-lethal, and door breaching capabilities via a 12 gauge accessory shotgun attachment.

Description and Specifications

The **XM26 12 Gauge Modular Accessory Shotgun System (MASS)** is an accessory shotgun that attaches underneath the barrel of the M4 and M16 Modular Weapon Systems (MWS) and provides the capabilities to fire lethal and non-lethal 12 gauge rounds, as well as door breaching ammunition. MASS provides a capability equivalent to a stand-alone shotgun without carrying a second weapon.

XM29 Integrated Airburst Weapon System



Mission

Provide the infantry Soldier with a decisive overmatch capability in a next-generation weapon system that will dramatically increase lethality, range, and capability through the use of a family of munitions consisting of high-explosive airbursting, target practice, blank, armor piercing, and kinetic energy ammunition.

Description and Specifications

The **XM29 Integrated Airburst Weapon System** will replace selected M16 rifles and M4 carbines. The modular, dual-barrel XM29 will combine the lethality of the 25mm family of munitions and 5.56mm NATO ammunition with a full-solution target acquisition/fire control to effect decisively violent and suppressive target effects and to greatly improve small arms performance. This fire control will incorporate a laser rangefinder, ballistic processor, direct view optics, electronic compass (bearing, tilt, and cant), thermal sighting, and an internal display.

The **XM29** consists of two subsystems, will be net ready and will provide the lethality upgrade for the Future Force Warrior.

Spiral development is being used to accelerate the fielding of both weapon subsystems separately in advance of the dual-barrel system. The **Objective Individual Combat Weapon (OICW)** Increment I is the kinetic energy (KE) component and OICW Increment II (**XM25**) is the airbursting component of the XM29.

The XM29's precision 25mm high explosive airbursting (HEAB) ammunition is capable of defeating not only exposed targets, but those in defilade (targets that have taken cover behind structures, terrain features, and/or vehicles), a capability lacking in current direct fire rifles and carbines. The XM29 will provide an overmatch in system effectiveness while increasing its ability to:

- Provide effective day/night operation
- Provide a significant increase in lethality
- Mitigate aim error associated with standard KE ammunition with the option of firing a 25mm airbursting projectile with a low-arc trajectory.

The XM25 component provides a revolutionary airbursting weapon capability to defeat defilade targets. It incorporates the 25mm airbursting weapon and ammunition and a day/night full solution target acquisition/fire control.

The **OICW Increment I** family of weapons will have performance better than or equal to the M4, will offer increased reliability, will be configurable to meet mission requirements by easy barrel change, and will integrate sighting and pointing/illuminating devices.

XM320 Grenade Launcher Module (GLM)



Mission

Provide the Infantry Soldier with a lighter, safer, and more reliable grenade launcher with a day/night sighting capability, as well as the ability to fire all existing and improved 40mm ammunition.

Description and Specifications

The **XM320 Grenade Launcher Module (GLM)** is a 40mm grenade launcher that will replace selected M203 series grenade launchers currently mounted on the M16/M4 series of rifles and carbines. The XM320 is intended to be lighter, safer, and more reliable than current man-portable grenade launching systems, and will provide improved lethality by providing a day/night firing capability out to the maximum effective range of current ammunition. It is also designed to offer an open-architecture attachment system that will enable the system to be mounted to a variety of rifles and carbines (M16A2, M16A4, M4, M4A1, and the OICW I). XM320 fires in a stand-alone mode with an attached shoulder buttstock and provide safer and more reliable trigger/firing system, compared to the M203. The weapon will also have an unrestricted breach mechanism to allow the use of longer ammunition than currently fielded.

Program Executive Office Soldier integrates 350 programs, enabling the Soldier to dominate the full spectrum of peace and war, now and in the future.

PEO Soldier comprises the following Project Management and special activities offices:

Project Manager Soldier Warrior

Ft. Belvoir, VA

Product Manager Air Warrior

Redstone Arsenal, AL

Product Manager Land Warrior

Ft. Belvoir, VA

Product Manager Mounted Warrior

Ft. Belvoir, VA

Project Manager Soldier Equipment

Ft. Belvoir, VA

Product Manager Clothing and Individual Equipment

Ft. Belvoir, VA

Product Manager Sensors and Lasers

Ft. Belvoir, VA

Project Manager Soldier Weapons

Picatinny Arsenal, NJ

Product Manager Crew Served Weapons

Picatinny Arsenal, NJ

Product Manager Individual Weapons

Picatinny Arsenal, NJ

Rapid Fielding Initiative

Ft. Belvoir, VA

For more information about Program Executive Office Soldier, please contact:

Public Affairs Office

703-704-2802/DSN 654-2802

<http://www.peosoldier.army.mil>

Acquisition Category (ACAT)

Categories established to facilitate decentralized decision making and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures. The ACATs are listed below:

ACAT I programs are **Major Defense Acquisition Programs (MDAPs)**. An MDAP is defined as a program estimated by the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) to require eventual expenditure for **Research, Development, Test and Evaluation (RDT&E)** of more than \$365 million (Fiscal Year (FY) 2000 constant dollars) or procurement of more than \$2.19 billion (FY 2000 constant dollars), or those designated by the USD (AT&L) to be ACAT I. ACAT I programs have two sub-categories:

The USD (AT&L) designates programs as ACAT ID or ACAT IC.

ACAT ID for which the **Milestone Decision Authority (MDA)** is USD (AT&L). The D (in ACAT ID) refers to the **Defense Acquisition Board (DAB)**, which advises the USD (AT&L) at major decision points.

ACAT IC for which the MDA is the DoD Component Head or, if delegated, the DoD Component Acquisition Executive (CAE). The C (in ACAT IC) refers to Component.

ACAT IA programs are **Major Automated Information Systems (MAISs)** or programs designated by the Assistant Secretary of Defense for Networks and Information Integration (ASD(NII)) to be ACAT IA. An MAIS is an Automated Information System (AIS) program that is: 1) designated by the ASD(NII) as an MAIS; or 2) estimated to require program costs in any

single year in excess of \$32 million (FY 2000 constant dollars), total program in excess of \$126 million (FY 2000 constant dollars), or total Life Cycle Costs (LCCs) in excess of \$378 million (FY 2000 constant dollars). MAISs do not include Information Technology (IT) that involves equipment that is an integral part of a weapon system or is an acquisition of services program. ACAT IA programs have two sub-categories:

ACAT IAM for which the MDA is the Chief Information Officer (CIO) of the DoD, the ASD(NII). The M (in ACAT IAM) refers to MAIS.

ACAT IAC for which the DoD CIO has delegated MDA to the CAE or Component CIO. The C (in ACAT IAC) refers to Component.

The ASD(NII) designates programs as ACAT IAM or ACAT IAC.

ACAT II programs are defined as those acquisition programs that do not meet the criteria for an ACAT I program, but do meet the criteria for a major system. A major system is defined as a program estimated by the DoD Component Head to require eventual expenditure for RDT&E of more than \$140 million in FY 2000 constant dollars, or for procurement of more than \$660 million in FY 2000 constant dollars or those designated by the DoD Component Head to be ACAT II. The MDA is the DoD CAE.

ACAT IIA programs are AIS programs that do not meet the criteria for ACAT IA, but are designated by the Army Acquisition Executive (AAE) or Army CIO for Program Manager (PM) management and Army Major Automated Information System Review Council (MAISRC) review. (Army only)

ACAT III programs are defined as those acquisition programs that do not meet the criteria for ACAT I, ACAT IA, or ACAT II programs. The MDA is designated by the CAE and shall be at the lowest appropriate level. This category includes less-than-major AISs.

ACAT IV are programs in the Army not otherwise designated as ACAT I, II or III. ACAT IV programs are managed by a systems manager within a materiel command as opposed to ACAT I-III programs which are managed by a PM.

Acquisition Phase

All the tasks and activities needed to bring a program to the next major milestone occur during an acquisition phase. Phases provide a logical means of progressively translating B-4 broadly stated mission needs into well-defined system-specific requirements and ultimately into operationally effective, suitable, and survivable systems.

Advanced Technology Demonstration (ATD)

Used to demonstrate the maturity and potential of advanced technologies for enhanced military operational capability or cost effectiveness, and reduce technical risks and uncertainties at the relatively low costs of informal processes. ATDs are funded with Advanced Technology Development (ATD) funds.

Advanced Technology Development (ATD)

Budget Activity (BA) 3 within a **Research, Development, Test and Evaluation (RDT&E)** appropriation account that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. ATD also includes **Concept and Technology Demonstrations (CTDs)** of components and subsystems or system models. The models may be Form, Fit and Function (F3) prototypes or scaled

models that serve the same demonstration purpose. Projects typically have a direct relevance to identified military needs. The result of these type efforts are proof of technological feasibility and assessment of subsystem and component operability and producibility rather than the development of hardware for Service use. Program Elements (PEs) funded under this BA typically involve pre-**Milestone B** efforts such as system concept demonstrations, joint and Service-specific experiments or technology demonstrations. **Advanced Technology Demonstrations** are funded with ATD funds. (DoD 7000.14-R)

Basis of Issue (BOI)

Derived from the Army's Master Plan, the BOI determines what goes where, from tanks to canteens.

Basis of Issue Plan (BOIP)

Document that establishes the distribution of new equipment and associated support items of equipment and personnel, as well as the reciprocal displacement of equipment and personnel.

Block Approach

See **Evolutionary Acquisition**.

Budget Activity (BA)

Subdivisions within each appropriation and fund account that identify the purposes, projects, or types of activities financed by the appropriation or fund.

C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance) Architecture Framework

Provides rules, guidance and product descriptions for developing and presenting different architectural views of a given system to ensure a common denominator for understanding, comparing and integrating architectures across DoD. Comprised of operational,

system and technical architectural views. All on-going and planned C4ISR architectures are required to be developed in accordance with this framework.

Capability Development Document (CDD)

A document that captures the information necessary to develop a proposed program(s), normally using an **evolutionary acquisition** strategy. The CDD outlines an affordable increment of militarily useful, logistically supportable and technically mature capability. The CDD supports a **Milestone B** decision review. The CDD format is contained in **CJCSM 3170.01**. (CJCSI 3170.01C and CJCSM 3170.01)

Capability Production Document (CPD)

A document that addresses the production elements specific to a single increment of an acquisition program. The CPD must be validated and approved before a **Milestone C** decision review. The refinement of performance attributes and Key Performance Parameters (KPPs) is the most significant difference between the CDD and CPD. The CPD format is contained in **CJCSM 3170.01**. (CJCSI 3170.01C and CJCSM 3170.01)

CJCSI 3170.01

Chairman of the Joint Chiefs of Staff Instruction (CJCSI) Joint Capabilities Integration and Development System (JCIDS). Establishes the policies and procedures of JCIDS.

Clothing Bag

Those basic issue items provided to all soldiers (not officers) upon entry into the Army.

Commercial and Non-Developmental Items

Market research and analysis shall be conducted to determine the availability and suitability of existing commercial and non-developmental items prior to the

commencement of a development effort, during the development effort, and prior to the preparation of any product description. For ACAT I and IA programs, while few commercial items meet requirements at a system level, numerous commercial components, processes, and practices have application to DoD systems.

Concept and Technology Development

Concept and technology development refers to the development of a materiel solution to an identified, validated need. During this phase, the **Mission Needs Statement (MNS)** is approved, technology issues are considered, and possible alternatives are identified. In this phase, the initiation concept is approved, a lead component is designated, and exit criteria are established. The leader of the concept development team will work with the integrated test team to develop an evaluation strategy that describes how the capabilities will be evaluated once the system is developed.

Major components of this phase are Concept Exploration, Decision Review, and Component Advanced Development. Concept Exploration evaluates the feasibility of alternative concepts and assesses the merits of these concepts. This phase ends with a Decision Review, at which the preferred concept for the technologies that are available is selected. The Decision Review may also determine whether additional component development is necessary before key technologies can enter **System Development and Demonstration**. Component Advanced Development occurs when the project leader has a concept for the needed capability, but does not yet know the system architecture. The project exits Component Advanced Development when a system architecture has been developed and the component technology has been demonstrated in the relevant environment or the **Milestone Decision Authority (MDA)** decides to end

this effort. This effort is intended to reduce risk on components that have only been demonstrated in a laboratory environment and to determine the appropriate set of subsystems to be integrated into a full system.

Concept Decision (CD)

First decision point of the Defense Acquisition Management Framework. It authorizes entry into the **Concept Refinement (CR)** phase. The principal document at this decision point is the **Initial Capabilities Document (ICD)** which also contains an approved plan for conducting an Analysis of Alternatives (AoA). A successful CD does not mean that a new acquisition program has been initiated since funding is normally limited to the CR phase which follows. (DoDI 5000.2) See **Program Initiation**.

Concept Refinement (CR)

The first phase of the Defense Acquisition Management Framework as defined and established by DoDI 5000.2. The purpose of this phase is to refine the concept documented in the ICD and to prepare a Technology Development Strategy (TDS). The MDA decision to begin CR does not constitute program initiation of a new acquisition program. See **Program Initiation**.

Contract Award

Occurs when the contracting officer has signed and distributed the contract to the contractor.

Contract Definition

A funded effort, normally by two or more competing contractors, to establish specifications, to select technical approaches, to identify high-risk areas, and to make cost and production time estimates for developing large weapon systems.

Critical Design Review (CDR)

A technical review that may be conducted to determine that the detailed design satisfies the performance and engineering requirements of the development specification; to establish the detailed design compatibility among the item and other items of equipment, facilities, computer programs and algorithms, and personnel; to assess producibility and risk areas; and to review the preliminary product baseline specifications. Normally conducted during the **System Development and Demonstration (SDD)** phase.

Defense Acquisition Board (DAB)

The DAB is the Department's senior-level forum for advising the Under Secretary of Defense (Acquisition, Technology, & Logistics) (USD (AT&L)) on critical decisions concerning Acquisition Category (ACAT) ID programs. The DAB is composed of the Department senior acquisition officials. The Board is chaired by the USD (AT&L). The Vice Chairman of the Joint Chiefs of Staff (VCJCS) serves as the vice chairman of the Board. Other principal members of the Board include the Principal Deputy USD (AT&L); the Under Secretary of Defense Comptroller (USD (C)); the Under Secretary of Defense (Policy); the Under Secretary of Defense (Personnel and Readiness); the Assistant Secretary of Defense for Networks and Information Integration (ASD(NII))/DoD Chief Information Officer; the Director of Operational Test and Evaluation (DOT&E); the Secretaries of the Army, Navy, and the Air Force. The DAB Chairman is also routinely supported by senior advisors such as the Director of Defense Procurement/Acquisition Policy (DP/AP) and the Chairman of the Cost Analysis Improvement Group (CAIG). Other senior Department officials may be invited by the USD (AT&L) to participate in DAB meetings on an as-needed basis.

Depot Level (D Level) Maintenance

Maintenance performed on materiel requiring major overhaul or a complete rebuild of parts, assemblies, subassemblies, and end items, including the manufacture of parts, modification, testing, and reclamation as required. Supports organizational and intermediate maintenance activities by more extensive shop facilities and personnel of higher technical skill than are normally available at the lower levels of maintenance.

Design Readiness Review (DRR)

Provides for a mid-phase assessment of design maturity during the **System Development and Demonstration (SDD)** phase. According to **DoDI 5000.2**, design maturity may be gauged by the number of subsystem and system design reviews successfully completed; the percentage of drawings completed; planned corrective actions to hardware/software deficiencies; adequate Developmental Testing (DT); an assessment of Environmental, Safety and Occupational Health (ESOH) risks; a completed Failure Modes and Effects Analysis (FMEA); the identification of key system characteristics and critical manufacturing processes; an estimate of system reliability based on demonstrated reliability rates; and other indicators, as appropriate.

Developmental Test and Evaluation (DT&E)

1. Any testing used to assist in the development and maturation of products, product elements, or manufacturing or support processes.
2. Any engineering-type test used to verify status of technical progress, verify that design risks are minimized, substantiate achievement of contract technical performance, and certify readiness for initial **Operational Testing (OT)**. Development tests generally require instrumentation and measurements

and are accomplished by engineers, technicians, or soldier operator-maintainer test personnel in a controlled environment to facilitate failure analysis.

Disposal

At the end of its useful life, a system must be demilitarized and disposed of. Disposal must be carried out according to all legal and regulatory requirements relating to safety, security, and the environment.

DODD 5000.1

DoD Directive 5000.1, “The Defense Acquisition System.”

DODI 5000.2

DoD Instruction 5000.2, “Operation of the Defense Acquisition System.”

Engineering Change Proposal (ECP)

A proposal to the responsible authority recommending that a change to an original item of equipment be considered, and the design or engineering change be incorporated into the article to modify, add to, delete, or supersede original parts.

Evolutionary Acquisition (EA)

The preferred DoD strategy for rapid acquisition of mature technology for the user according to **DoDI 5000.2**. An evolutionary approach delivers capability in increments, recognizing up front the need for future capability improvements. There are two approaches to achieving an EA: Spiral Development and Incremental Development as noted below:

1. **Spiral Development:** In this process, a desired capability is identified, but the end-state requirements are not known at program initiation. Requirements are refined through demonstration, risk management and continuous user feedback.

Each increment provides the best possible capability, but the requirements for future increments depend on user feedback and technology maturation. According to DoDD 5000.1, spiral development is the preferred process for executing an EA strategy.

2. **Incremental Development:** In this process, a desired capability is identified, an end-state requirement is known, and that requirement is met over time by developing several increments, each dependent on available mature technology.

First Unit Equipped (FUE) Date

The scheduled date system or end item and its agreed upon support elements are issued to the designated **Initial Operational Capability (IOC)** unit and training specified in the new equipment training plan has been accomplished.

Full Operational Capability (FOC)

The full attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics, which is manned and operated by a trained, equipped, and supported military unit or force.

Full Rate Production (FRP)

Contracting for economic production quantities following stabilization of the system design and validation of the production process.

Full Rate Production Decision Review (FRPDR)

A review normally conducted at the conclusion of **Low Rate Initial Production (LRIP)** that authorizes entry into the **Full Rate Production (FRP) and Deployment (FRP&D)**. Formerly called Milestone III.

Indefinite Quantity Contract (IQC)

Provides for furnishing an indefinite quantity, within

stated limits, of specific supplies or services, during a specified contract period, with deliveries to be scheduled by the timely placement of orders upon the contractor by activities designated either specifically or by class.

Initial Capabilities Document (ICD)

Documents the need for a materiel approach to a specific capability gap derived from an initial Analysis of Materiel Approaches (AMA) executed by the operational user and, as required, an independent analysis of materiel alternatives. The ICD defines the gap in terms of the functional area, the relevant range of military operations, desired effects and time. It also summarizes the results of Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) analysis and describes why nonmaterial changes alone have been judged inadequate in fully providing the capability. (CJCSI 3170.01C)

Initial Operational Capability (IOC)

The first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics with the appropriate number, type, and mix of trained and equipped personnel necessary to operate, maintain, and support the system. It is normally defined in the **Capability Development Document (CDD)** and the **Capability Production Document (CPD)**.

Initial Operational Test and Evaluation (IOT&E)

Dedicated Operational Test and Evaluation (OT&E) conducted on production, or production representative articles, to determine whether systems are operationally effective and suitable, and which supports the decision to proceed **Beyond Low Rate Initial Production (BLRIP)**.

Live Fire Test and Evaluation (LFT&E)

A test process to evaluate the vulnerability and/or lethality aspects of a conventional weapon or conventional weapon system. LFT&E is a statutory requirement (Title 10 U.S.C. § 2366) for covered systems, major munitions programs, missile programs, or product improvements to a covered systems, major munitions programs, or missile programs before they can proceed **Beyond Low Rate Initial Production (BLRIP)**. By law, a covered system is any vehicle, weapon platform, or conventional weapon system that includes features designed to provide some degree of protection to users in combat and that is an Acquisition Category (ACAT) I or ACAT II program. (Note: The term covered system can also be taken to mean any system or program covered by Title 10 U.S.C. § 2366, including major munitions and missile programs.)

Low Rate Initial Production (LRIP)

1. The first effort of the **Production and Deployment (P&D)** phase. The purpose of this effort is to establish an initial production base for the system, permit an orderly ramp-up sufficient to lead to a smooth transition to **Full Rate Production (FRP)**, and to provide production representative articles for **Initial Operational Test and Evaluation (IOT&E)** and full-up live fire testing. This effort concludes with a **Full Rate Production Decision Review (FRPDR)** to authorize **Full Rate Production and Deployment (FRP&D)**.
2. The minimum number of systems (other than ships and satellites) to provide production representative articles for **Operational Test and Evaluation (OT&E)**, to establish an initial production base, and to permit an orderly increase in the production rate sufficient to lead to Full Rate Production (FRP) upon successful completion of Operational

Testing (OT). For **Major Defense Acquisition Programs (MDAPs)**, LRIP quantities in excess of 10 percent of the acquisition objective must be reported in the Selected Acquisition Report (SAR). For ships and satellites LRIP is the minimum quantity and rate that preserves mobilization.

Major Automated Information System (MAIS) Acquisition Program

An AIS acquisition program that is (1) designated by ASD (C31) as a MAIS, or (2) estimated to require program costs in any single year in excess of 30 million in FY96 constant dollars, total program costs in excess of 120 million in FY96 constant dollars, or total life-cycle costs in excess of 360 million in FY96 constant dollars. MAISs do not include highly sensitive classified programs.

Materiel Release Order*

An order issued by an accountable supply system manager (usually an inventory control point or accountable depot or stock point) directing a non-accountable activity (usually a storage site or materiel drop point) within the same supply distribution complex to release and ship materiel.

Milestone (MS)

The point at which a recommendation is made and approval sought regarding starting or continuing an acquisition program, i.e., proceeding to the next phase. Milestones established by DoDI 5000.2 are:

MS A approves entry into the **Technology Development (TD)** phase

MS B approves entry into the **System Development and Demonstration (SDD)** phase

MS C approves entry into the **Production and Deployment (P&D)** phase

Also of note are the **Concept Decision (CD)** that approves entry into the **Concept Refinement (CR)** phase; the **Design Readiness Review (DRR)** that ends the **System Integration (SI)** effort and continues the SDD phase into the System Demonstration (SD) effort; and the **Full Rate Production Decision Review (FRPDR)** at the end of the **Low Rate Initial Production (LRIP)** effort of the P&D phase that authorizes **Full Rate Production (FRP)** and approves deployment of the system to the field or fleet.

Milestone Decision Authority (MDA)

Designated individual with overall responsibility for a program. The MDA shall have the authority to approve entry of an acquisition program into the next phase of the acquisition process and shall be accountable for cost, schedule, and performance reporting to higher authority, including congressional reporting. (DoDD 5000.1)

Mission Need Statement (MNS)

Legacy document. A formatted non-system-specific statement containing operational capability needs and written in broad operational terms. It describes required operational capabilities and constraints to be studied during the **Concept Refinement (CR)** and **Technology Development (TD)** phases. MNSs that have initiated staffing in the Joint C4I (Command, Control, Communications, Computers, and Intelligence) Program Assessment Tool (JCPAT) (Knowledge Management/ Decision Support (KM/DS) tool) will continue through the normal staffing process, but no new MNSs will be accepted for staffing. **Initial Capabilities Documents (ICDs)**, developed in accordance with **CJCSI 3170.01C**, will be used instead. Programs that have already completed **Milestone A**, or beyond, are not required to update the MNS with an ICD. However, no MNS greater than two years old will be used to support a Milestone A

(or **Milestone B** or **C** for programs proceeding directly to these milestones) acquisition decision. (CJCSI 3170.01C)

New Start

An item or effort appearing in the President's Budget (PB) for the first time; an item or effort that was previously funded in basic or applied research and is transitioned to **Advanced Technology Development (ATD)** or engineering development; or an item or effort transitioning into procurement appearing in the PB for the first time in the investment area. Often confused with program initiation, an acquisition term that describes the milestone decision that initiates an acquisition program.

NOMEX®†

A flame resistant fiber produced by DuPont, available in sheet and fiber form.

Off-the-Shelf

Procurement of existing systems or equipment without a **Research, Development, Test and Evaluation (RDT&E)** program or with minor development to make system suitable for DoD needs. May be commercial system/equipment or one already in DoD inventory. See **Commercial and Non-Developmental Item**.

Open System

A system that implements specifications maintained by an open, public consensus process for interfaces, services, and support formats, to enable properly engineered components to be utilized across a wide range of systems with minimal change, to interoperate with other components on local and remote systems, and to interact with users in a manner that facilitates portability.

Operational Capability

The measure of the results of the mission, given the condition of the systems during

the mission (dependability).

Operational Requirements Document (ORD)

Legacy document. A formatted statement containing performance and related operational performance parameters for the proposed concept or system. ORDs will be accepted for Joint Staff review until late December 2003. After this date, only ORD updates/ annexes, **Capability Development Documents (CDDs)** and **Capability Production Documents (CPDs)** developed in accordance with **CJCSI 3170.01C** will be accepted. A validated and approved ORD, developed under CJCSI 3170.01A or CJCSI 3170.01B, may be used to support a **Milestone B** or **Milestone C** decision in lieu of a CDD or CPD until late June 2005. See **Capability Development Document and Capability Production Document**. (CJCSI 3170.01C)

Operational Test and Evaluation (OT&E)

The field test, under realistic conditions, of any item (or key component) of weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users; and the evaluation of the results of such tests.

Operations and Support

The objective of the Operations and Support phase is the execution of a support program that meets operational support performance requirements and sustainment of systems in the most cost-effective manner throughout their life-cycle. The sustainment program includes all elements necessary to maintain the readiness and operational capability of deployed systems. The scope of support varies among programs but generally includes supply, maintenance, transportation, sustaining engineering, data management, configuration management, manpower, personnel, training,

habitability, survivability, safety, IT supportability, and environmental management functions. This activity also includes the execution of operational support plans.

Operations and Support, software

Programs with software components must be capable of responding to emerging requirements that will require software modification or periodic enhancements after a system is deployed. A follow-on operational test and evaluation program that evaluates operational effectiveness, survivability, suitability, and interoperability, and that identifies deficiencies is conducted, as appropriate.

Product Manager (PM)

The Product Manager is delegated authority and assigned responsibility for centralized management of a development or acquisition program that does not qualify for project management. PM positions are usually at the rank of Lieutenant Colonel or GS-14.

Production and Deployment (P&D) phase

The fourth phase of the life cycle as defined and established by **DoDI 5000.2**. This phase consists of two efforts, **Low Rate Initial Production (LRIP)** and **Full Rate Production and Deployment (FRP&D)**, and begins after a successful **Milestone C** review. The purpose of this phase is to achieve an operational capability that satisfies the mission need.

LRIP is intended to result in completion of manufacturing development to ensure adequate manufacturing capability and to produce the minimum quantity necessary for initial operational test and evaluation. The **Full-Rate Production Decision Review** considers the cost estimate, manpower, results of test and evaluation, compliance and interoperability certification. Following the completion of a Full-Rate Production Decision Review, the program enters FRP&D.

Production Qualification Test (PQT)

A technical test completed prior to the Full Rate Production (FRP) decision to ensure the effectiveness of the manufacturing process, equipment, and procedures. This testing also serves the purpose of providing data for the independent evaluation required for materiel release so that the evaluator can address the adequacy of the materiel with respect to the stated requirements. These tests are conducted on a number of samples taken at random from the first production lot, and are repeated if the process or design is changed significantly, and when a second or alternative source is brought on line.

Production Readiness Review (PRR)

A formal examination of a program to determine if the design is ready for production, production engineering problems have been resolved, and the producer has accomplished adequate planning for the production phase. Normally performed as a series of reviews toward the end of **System Development and Demonstration (SDD)** phase or early in **Production and Deployment (P&D)** phase.

Program Initiation

The point at which a program formally enters the acquisition process. Under DoDI 5000.2, program initiation normally occurs at **Milestone B**, but may also occur at other milestones/decision points depending upon technology maturity and risk. At program initiation, a program must be fully funded across the Future Years Defense Program (FYDP) as a result of the Program Objectives Memorandum (POM)/budget process, that is, have an approved resource stream across a typical defense program cycle, for example Fiscal Year (FY) 2006-2011. **Concept Refinement (CR)** and **Technology Development (TD)** phases are typically not fully-funded and thus do not constitute program initiation of a new acquisition program in the sense

of DoDI 5000.2. This term is often confused with the financial management term new start. See New Start, Concept Refinement, and Technology Development.

Program Management

The process whereby a single leader exercises centralized authority and responsibility for planning, organizing, staffing, controlling, and leading the combined efforts of participating/assigned civilian and military personnel and organizations, for the management of a specific defense acquisition program or programs, throughout the system life cycle.

Qualification

The formal process by which a manufacturer's product is examined for compliance with the requirements of a source control drawing for the purpose of approving the manufacturer as a source of supply.

Qualification Test

Simulates defined operational environmental conditions with a predetermined safety factor, the results indicating whether a given design can perform its function within the simulated operational environment of a system.

1. Activities for the development of a new system or to expand the performance of fielded systems.
2. An appropriation.

Second Source

Execution of established acquisition strategy to qualify two producers for the part or system. Sometimes called dual sourcing.

Soldier Enhancement Program (SEP)[†]

Approved by Congress in 1989 and revised in 1992 with the aim speeding the "factory to foxhole" process to enhance Soldier lethality, survivability, mobility, command and control, and sustainability

with improved weapons and equipment.

Spectra[†]

Spectra[®] fiber is one of the world's strongest and lightest fibers. A bright white polyethylene, it is, pound-for-pound, ten times stronger than steel, more durable than polyester and has a specific strength that is 40 percent greater than aramid fiber.

Spiral Development

See **Evolutionary Acquisition**.

Sustainment

1. The first effort of the **Operations and Support (O&S)** phase established and defined by **DoDI 5000.2**. The purpose of the Sustainment effort is to execute the support program to meet operational support performance requirements and sustain the system in the most cost effective manner over its life cycle. Sustainment includes supply, maintenance, transportation, sustaining engineering, data management, Configuration Management (CM), manpower, personnel, training, habitability, survivability, environment, safety (including explosives safety), occupational health, protection of critical program information, anti-tamper provisions, Information Technology (IT) (including National Security Systems (NSS)), supportability, and interoperability functions. Sustainment overlaps the **Full Rate Production (FRP)** and Deployment effort of the **Production and Deployment (P&D)** phase. (DoDI 5000.2)
2. The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective. (**CJCSI 3170.01C**)

System Development and Demonstration (SDD)

1. The third phase of the life cycle as defined and established by **DoDI 5000.2**. This phase consists of two efforts, **System Integration (SI)** and **System Demonstration (SD)**, and begins after **Milestone B**. It also contains a **Design Readiness Review (DRR)** at the conclusion of the SI effort. A successful Milestone B can place the program in either SI or SD. A program planning to proceed into SD at the conclusion of SI will first undergo a DRR to confirm that the program is progressing satisfactorily during the phase.
2. **Budget Activity (BA) 5** within a **Research, Development, Test and Evaluation (RDT&E)** appropriation account. Involves mature system development, integration and demonstration to support **Milestone C** decisions and the conduct of **Live Fire Test and Evaluation (LFT&E)** and **Initial Operational Test and Evaluation (IOT&E)** of production representative articles. A logical progression of program phases and development and production funding must be evident in the Future Years Defense Program (FYDP) consistent with DoD's full funding policy. (DoD 7000.14-R)

System Integration

The first effort of the **System Development and Demonstration (SDD)** phase. A program enters **System Integration (SI)** when the **Program Manager (PM)** has a technical solution for the system, but has not yet integrated the subsystems into a complete system. The **Capability Development Document (CDD)** guides the effort which typically includes demonstration of prototype articles or Engineering Development Models (EDMs). A successful **Design Readiness Review (DRR)** ends the SI effort. (DoDI 5000.2)

System of Systems (SoS)

A set or arrangement of interdependent systems that are related or connected to provide a given capability. The loss of any part of the system will degrade the performance or capabilities of the whole. (CJCSI 3170.01C)

Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)); Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics) (OUSD (AT&L))

The OUSD (AT&L) is organized around services, Research and Development (R&D), and materiel acquisition. Several organizational elements report directly to the USD (AT&L) including the Principal Deputy USD (PDUSD (AT&L)), the Director, Defense Research and Engineering (DDR&E), the DUSD (Logistics and Materiel Readiness), and the Director, Ballistic Missile Defense Organization (BMDO). Also, reporting into staff elements within OUSD (AT&L) are a number of Defense agencies such as the Defense Logistics Agency (DLA) and the Defense Advanced Research Projects Agency (DARPA).

All acquisition-related definitions are taken from the Defense Acquisition University Glossary. For further information on acquisition-related terminology, see DAU's site at <http://akss.dau.mil/jsp/Glossary.jsp>.

*Those entries marked with * derive from the DOD Dictionary of Military Terms, <http://www.dtic.mil/doctrine/jel/doddict/>.

†Those marked with the † symbol are adapted from other sources.

A

Advanced Bomb Suit (ABS) 90
 Advanced Tactical Parachute System (ATPS) 92
 Air Warrior (AW) 16
 Airburst Ammunition 168
 Aircraft Modular Survival System (AMSS) 18
 Aircraft Wireless Intercom System (AWIS) 20
 Aircrew Clothing 94
 Aircrew Cold Weather Clothing System (ACWCS) 94
 Aircrew Equipment 96
 Aircrew Integrated Helmet System (AIHS), HGU-56/P Helmet 22
 Aircrew/Combat Vehicle Crewman Overalls 94
 All-Purpose Lightweight Individual Carrying Equipment (ALICE) 134
 Ammunition Research, Development, Testing, and Evaluation 168
 AN/AVS-6 Aviator's Night Vision Imaging System (ANVIS) 62
 AN/PAS-13 Thermal Weapon Sight (TWS) 64
 AN/PEQ-2A and AN/PAQ-4C Aiming Lights 66
 AN/PVS-10 Sniper Night Sight (SNS) 70
 AN/PVS-14 Night Vision Device 68
 AN/PVS-7D and AN/PVS-14 Night Vision Devices 68
 AN/PVS-7D Night Vision Device 68
 Anti-Flash Hood 94, 126
 Arctic Camouflage Parka and Trousers 120
 Arena Flakjak Goggles 124
 Army Combat Boot (Hot Weather) (ACB [HW]) 112
 Army Combat Boot (Temperate Weather) (ACB [TW]) 112
 Army Combat Glove 158
 Army Combat Helmet (ACH) 130
 Army Combat Uniform 98

B

Balaclava Hood 120

Ballistic and Non-Ballistic Protection 100
 Ballistic Face and Body Shields and Ballistic Shin Guards 100
 Ballistic Laser Protection System (BLPS) 124
 Barbed Wire Handler's Gloves 158
 Battle Dress Overgarment (BDO) 118
 Beret 148
 Black Fleece Bib and Jacket 128
 Blast Protective Footwear System (BPFS) 102
 Body Armor 104
 Body Armor, Aircrew Integrated Recovery Survival Armor Vest and Equipment (AIRSAVE) 106
 Body Armor, Concealable 108
 Body Specs Pistol Spectacles 124
 Boots – Cold (Wet and Dry) Weather 110
 Boots – Utility 112
 Brown Bath Towel 160

C

Camouflage Face Paint (CFP) 114
 Camouflage Systems 114
 Canteens 116
 Cap, Woodland Camo, Temperate Battle Dress Uniforms (BDU) 160
 Chemical Biological Protective Equipment Bag 118
 Chemical Protective Clothing and Gear 118
 Chemical Protective Glove Set 118
 Chemical Protective Helmet Cover 118
 Chemical Protective Undergarment (CPU) 118
 Civil Disturbance Protective Gear (Non-Ballistic Face, Body, and Shin Guards) 100
 Close Quarters Battle Kit (CQB Kit) 216
 Cockpit Air Bags System (CABS) 24
 Cold Weather Accessory Garments 120
 Cold Weather Canteen System 116
 Cold Weather Coat 160

Cold Weather Coat and Trousers Liners 128
 Cold Weather Glove Inserts 158
 Cold Weather Mittens 122
 Cold Weather Trigger-Finger Mitten Shells 122
 Combat Eye Protection 124
 Combat Patrol Pack 134
 Combat Vehicle Crewman (CVC) Clothing 126
 Combat Vehicle Crewman (CVC) Coverall 126
 Combat Vehicle Crewman Helmet (CVCH) 130
 Combined Camouflage Face Paint (CCFP) 114
 Commander's Digital Assistant (CDA) 42
 Communication Ear Plugs (CEP) 26
 Compression Sack 134
 Concealable Body Armor (CBA) System 108
 Concealable, Stab-Protection Body Armor (CSPBA) 108
 CVC Coverall Liner 126

D

Deltoid Axillary Protector 104
 Desert Combat Uniform 160
 Dismounted Battle Command System (DBCS) 42
 Dismounted-Combat ID Marking System (D-CIMS) 44
 Disposable Restraint System (DRS) 136
 Duffel Bag 134

E

Electronic Data Manager (EDM) 28
 Enhanced .50 Caliber Machine Gun (E-50) 170
 Enhanced Hot Weather BDU 160
 Enhanced Hot Weather BDU Cap 160
 Enhanced Night Vision Goggle (ENVG) (Image Intensifier and Infrared Capabilities) 72
 Equipment Belt Extender 134
 ESS ICE 2 Goggles 124
 ESS Land Ops Goggles 124

Index

ESS Profile NVG Goggles 124

ESS Vehicle Ops Goggles 124

E-Tool 134

Extended Cold Weather Clothing System (ECWCS) 128

Extended Cold Weather Polypropylene Underwear 128

Extreme Cold Weather (ECW) Mitten Set 122

Extreme Cold Weather Boot 110

Extreme Cold Weather Mask 120

F

Family of Batons and Nightsticks (FBN) 136

Family of Restraint Systems (FORS) 136

Field Case 134

Field Pack Cover 134

Firefighter's Integrated Suit-Combat (FIS-C) 118

Flyer's Glove, Intermediate Cold Weather (HAU-15P) 94

Fur Ruffs 120

Future Force Warrior 57

Future Handgun System (FHS) 218

G

Ghillie Suit Accessory Kit (GSAK) 114

GloTape and Soldier Combat Helmet Identification
Marking System (SCHIMS) 46

Grappling Hook, Collapsible (GHC) 156

Green or Black Vinyl Overshoes (GVO/BVO) 118

Grenade Vest, 40mm 134

Ground Soldier System 57

H

Harness Single Point Release (HSPR) 146

Heavy Thermal Weapon Sight 64

Helicopter Oxygen System (HOS) 30

Helmets 130

High Temperature Resistant Cold Weather Jacket 126

Hot Weather Combat Boot—Type I (HWCB-Type I) 112

Hot Weather Hat 160

I

Improved Aircrew Battle Dress Uniform (IABDU) 94

Improved Boot Sock 112

Improved Combat Shelter (ICS) 150

Improved Rainsuit (IRS) 162

Improved Toxicological Agent Protective
Ensemble (ITAP) 154

Individual Riot Control Agent Disperser (IRCAD) 136

Individual Tactical Load Bearing Vest 134

Infantry Combat Boot (ICB)—Type I 112

Insect Net 160

Integrated Laser/White Light Pointer (ILWLP) 74

Interceptor Body Armor (IBA) 104

Intermediate Cold Wet Boot with Removable
Liner (ICWB w/RL) 110

Intermediate Cold Wet Glove (ICWG) 158

I-STORM 84

J

Joint Advanced Laser Eye Protection Visor (JALEPV) 32

Joint Service Lightweight Integrated
Suit Technology (JSLIST) 132

K

Knee and Elbow Pads 100

L

Land Warrior (LW) 49

Large Field Pack 134

Laser Borelight System (LBS) AN/PEM-1 76

Law Enforcement and Special Reaction Team Bags 136

Light Thermal Weapon Sight 64

Lightweight Cold Weather Underwear
System (LWCWUS) 128

Lightweight Laser Designator Rangefinder
(LLDR) AN/PED-1 78

Lightweight Video Reconnaissance System (LVRS) 80

Load Carriage-Related Equipment 134

Low Profile Flotation Collar (LPFC) 96

M

M101 Common Remotely Operated Weapon
Station (CROWS) and CROWS—Lightning 172

M107 Semi-Automatic Long Range Sniper Rifle (LRSR) 174

M145 Machine Gun Optics 176

M16 Rifle Mod Line 222

M16A4 Rifle 220

M192 Lightweight Ground Mount for Machine Guns 178

M2 .50 Caliber Machine Gun 180

M24 Sniper Accessory Kit 182

M24 Sniper Weapon System (SWS) 184

M240B 7.62mm Medium Machine Gun 186

M240B Combat Ammo Pack 188

M240B Weight Reduction Program 190

M240H 7.62mm Machine Gun (Aviation Version) 192

M249 200-Round Soft Pack 194

M249 Squad Automatic Weapon (SAW) 196

M249 Squad Automatic Weapon (SAW)
Collapsible Buttstock 198

M249 Squad Automatic Weapon (SAW) Improved Bipod 200

M25 Stabilized Binoculars 202

M4 Carbine 224

M4 Carbine Mod Line 226

M9 Pistol, M9/M11 Pistol Rail 228

Magnified Combat Optic (MCO) 230

Maternity Cardigan Sweater 148

Mattock 134

Maxillofacial Shield (MFS) 34
 Medium Field Pack 134
 Medium Thermal Weapon Sight 64
 Men's and Women's Anticontact Gloves 158
 Men's and Women's Heavy Duty Gloves 158
 Microclimate Cooling System (MCS) 36
 MicroLight Enhanced Position Location
 Reporting System (EPLRS) Radio 42
 Micro-Rappel System (MRS) 156
 Mid-Size Riot Control Disperser, M37 (MCRD) 136
 Military Police and Law Enforcement Equipment 136
 Military Police Law Enforcement Ensemble 136
 MK VII Target Locator 82
 MK19 Grenade Machine Gun 204
 MK19 Tactical Engagement System (TES) 206
 Modified Improved Reserve Parachute System (MIRPS) 146
 Modular Lightweight Load-Carrying
 Equipment (MOLLE) 138
 Modular Sleeping Bag System (MSBS) 150
 MOLLE Hydration System 116
 Mountain Ski Boot 110
 Mountaineering Equipment 140
 Mounted Crewman Compartmented
 Equipment Bag (MCCEB) 134
 Mounted Warrior (MW) 54
 Multiband Inter/Intra Team Radio
 (MBITR) AN/PRC-148(V)(C) 51

N

Neck Gaiter 120
 Neckerchief, Brown 160

O

Oakley (Ballistic) Spectacle 124
 Objective Individual Combat Weapon System
 Increment I (OICW Increment I) 232

Objective Individual Combat Weapon System
 Increment II (OICW Increment II), XM25 234
 One-Quart Canteen 116
 Overcoat (Men and Women) 148

P

Parachute, MC1-B/C/E 142
 Parachute, T-10C 144
 Parachutist Drop Bag (PDB) 146
 Parachutist Equipment 146
 Parachutists and Ground Troops Helmet 130
 Personal/Optional Clothing and Equipment 148
 Personnel Armor System Ground Troops (PASGT) 104
 Plastic Shell Ski Boot 110
 Poncho Wet Weather Camouflage 162
 Poromeric Cook's Shoes 160
 Pyramex Venture II Spectacles 124

R

Rapid Fielding Initiative 6
 Revision Military Eyewear 124
 Riggers Belt 160

S

Safety Restraint Tether (SRT) 96
 Search Mirrors (SM) 136
 Self-Contained Toxic Environment
 Protective Outfit (STEPO) 154
 Self-Inflating Sleeping Mat 150
 Service Uniform 148
 Shelter Half Tent 150
 Silkweight Underwear 128
 Sleeping and Shelter Systems Equipment 150
 Sleeping Mat 150
 Small Arms Family of Suppressors (SAFoS) 236

Small Tactical Optical Rifle Mounted (STORM)
 Micro-Laser Rangefinder (MLRF) 84
 Snow Camouflage White Mitten Shells 122
 Snow/Ice Mobility Equipment 152
 Special Protective Eyewear, Cylindrical System (SPECS) 124
 SRU-37/P One-Man Life Raft and Container 38
 STORM 84
 Suit, Contamination Avoidance, Liquid
 Protective (SCALP) 118
 Sun, Wind, Dust Goggles (SWDG) 124

T

Tactical Assault Ladder System (TALS) 156
 Tactical Thigh Holster Extender (TTHE) 138
 Temperate BDU 160
 Toxicological Ensembles 154
 T-Shirt 160
 Two-Quart Collapsible Canteen 116

U

Universal Static Line (USL) 146
 Urban Utility Equipment (Grappling Hook
 and Micro-Rappel System) 156
 Utility Gloves 158
 Utility Uniforms and Accessories 160
 UVEX XC Spectacles 124

V

Viper Target Location System 86

W

Wet Weather (WW) Parka and Trousers (WWPT) 162
 Wet Weather Outer Garments 162
 White Cardigan Sweater 148
 Wiley-X PT-1 SC Spectacle 124
 Wiley-X SG-1 Spectacle 124

Index

Women's/Men's Class A/B 148

Women's/Men's Dress Mess Uniform 148

Wool Winter Sock 128

X

XM102 Reloadable Fuze for M84 168

XM110 7.62mm Semi-Automatic Sniper
Rifle System (SASS) 208

XM1037 Short Range Training Round for M249 168

XM1041/XM1042 Close Combat Mission Capability Kit 168

XM26 12 Gauge Modular Accessory
Shotgun System (MASS) 238

XM29 Integrated Airburst Weapon System 240

XM307 25mm Advanced Crew Served Weapon (ACSW) 210

XM312 Lightweight .50 Caliber Machine Gun 212

XM320 Grenade Launcher Module (GLM) 242



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